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THE UNIVERSITY OF ALBERTA

Centricity in Six Josquin Sacred Works: Reductive Analyses of Selected Passages

BY

Glen Edward Ethier

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF MUSIC

IN

MUSIC THEORY

DEPARTMENT OF MUSIC

EDMONTON, ALBERTA

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Master of Music

1990

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled

Centricity in Six Josquin Sacred Works: Reductive Analyses of Selected Passages.

Submitted by

Glen Edward Ethier

in partial fulfilment of the requirements for the degree of

MASTER OF MUSIC

in

MUSIC THEORY

Supervisor

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Date: Oct. 23, 1984

The following work is humbly and lovingly dedicated to my wife, Carolyn, without whose patience and support it would never have come to fruition. It is also dedicated to my two beautiful children, Jessica-Lynn Marie and Michael Josiah, who have given a purpose to my work.

ABSTRACT

Two approaches to the analysis of Renaissance music have evolved in the last three decades. Some scholars believe that Renaissance music must be analyzed in the context of modal theory, while others assert that analysis of the pre-tonal repertory must take place with little consideration for contemporaneous theoretical thought. Proponents of both approaches have used forms of reductive analysis in their work.

The following study investigates apparently idiomatically tonal passages in selected sacred works of Josquin des Prez (c.1440-1521), and attempts to determine if certain tonal characteristics are prevalent in those passages. Reductive analytical techniques reveal middle- and background levels of tonal coherence, but must be modified to accommodate modal and contrapuntal elements in the music. Specifically, the study determines that triadic arpeggiation and prolongation contribute to a sense of centricity in five masses and one mass fragment.

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It is with gratitude that I give my thanks to the many people who have supported me in this endeavour. Foremost is my adviser Dr. Christopher Lewis, whose guidance has been invaluable to me not only in this study, but in scholarly research and writing in general. I must also acknowledge my indebtedness to Dr. Mitchell Brauner, who initiated and nurtured my interest in the music of Josquin des Prez. Also, I direct my thanks to Dr. William Renwick and Catherine Nolan, Schenkerians whom I hold in great esteem. Finally, to all good friends who have helped me through the difficult times and provided me with support, especially Mr. Gregory Marion and Mr. John Doerksen, I offer my deepest thanks.

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CHAPTER I: BIOGRAPHY, MUSICAL STYLE

Our knowledge of Josquin's life contains gaps that have yet to be filled. No record of the composer's birth has been discovered, and the first archival evidence identifies him as a singer at the Milan Cathedral from July 1459 to December 1472.[1] His whereabouts from the end of 1472 to 1474 are unknown, but he is listed in the archives of the chapel of Galeazzo Maria Sforza in July, 1474.[2] Josquin's association with the Sforza court presumably ended with Galeazzo's assassination on 26 December 1476, and Josquin's name next appears in April 1479, in Milan.[3] He may have entered the service of René of Anjou at Aix in the Provençal region of France for a brief period in 1477.[4] It is possible that from 1479-1486 Josquin served under Cardinal Ascanio Sforza, brother of the assassinated

---

[1] Hellmuth Osthoff, *Josquin Desprez* (Tutzing: Hans Schneider, 1962-65), pp.11-12. See also Gustave Reese, "Josquin Desprez" in *The New Grove High Renaissance Masters*, ed. Stanley Sadie (New York: Norton, 1984), p.5. Sydney Robinson Charles asserts that Reese's work "is an excellent and up-to-date summary account" of Osthoff (Sydney Robinson Charles, *Josquin Des Prez. A Guide to Research* [New York: Garland Publishing, 1983], p.3.)

[2] Reese, "Josquin Desprez," p.5.

[3] Ibid., p.6.

[4] Ibid.

Galeazzo Maria, but the evidence is circumstantial.[5] Very little is known, then, of Josquin's life from 1476-1486.

Josquin joined the Papal Chapel in Rome in August, 1486.[6] The chapel records for the period 1495-1500 are missing; when they resume in 1501 Josquin is no longer listed as a member.[7] He was in France from 1501-1503, probably in association with the court of King Louis XII,[8] but the exact date of his departure from Rome remains unknown. Josquin served as *maestro di cappella* at the Ferrarese court under Duke Ercole I d'Este from the end of April 1503 until April 1504.[9] Finally, he returned north in 1504 to Condé-sur-Escaut where he served as provost at the Church of Notre Dame until his death on 27 August 1521.[10] Figure 1-1 summarizes the Josquin chronology.

---

[5] Ibid., pp.5-6.

[6] Richard Sherr, "Notes on Some Papal Documents in Paris," *Studi Musicali* XII/1 (1983), pp.8-9. Although Josquin is not listed as a singer in the chapel records until September, he was granted the privileges of the office in August.

[7] Reese, "Josquin Desprez," p.7.

[8] Ibid., p.8.

[9] Lewis Lockwood, "Josquin at Ferrara: New Documents and Letters," in *Josquin des Prez. Proceedings of the International Josquin Festival-Conference*, ed. Edward E. Lowinsky (London: Oxford University Press, 1976), p.114. According to Lockwood, Ercole I's reign at Ferrara lasted from 1471 until 1505 (p.104).

[10] Reese, "Josquin Desprez," pp.12-13.

Josquin's compositional style can be divided into three periods corresponding approximately to known events in his life (Figure 1-2).[11] Osthoff and Noble agree that

Figure 1-1. Josquin Chronology

1459-c.1479:	Milan Cathedral/Galeazzo Maria Sforza
c.1476-1486:	Unknown, possibly Ascanio Sforza (?)
1486 - 1495:	Rome, Papal Chapel
1495 - 1501:	Unknown, Rome/France (?)
1501 - 1503:	France, probably Louis XII
1503 - 1504:	Ferrarese court, Ercole I d'Este
1504 - 1521:	Condé-sur-Escaut, Church of Notre Dame

Figure 1-2. Stylistic Periods of Josquin's Life

Early:	1459-c.1485
Mature:	c.1485-c.1505
Late:	c.1506-1521

these stylistic divisions exist, and that they are clearly determinable in Josquin's masses. Noble summarizes Osthoff's stylistic criteria for each period.[12] The early period "is characterized mainly by a rather abstract, melismatic counterpoint, deriving from Ockeghem, in which the relationship between verbal and musical phraseology is tenuous and inconsistent."[13] The mature

---

[11] Osthoff, *Josquin Desprez* Vol. I, pp.105-106. See also Jeremy Noble, "Josquin Desprez," in *The New Grove High Renaissance Masters*, ed. Stanley Sadie (New York: Norton, 1984), pp.24-25.

[12] Although Osthoff's work came first and is still the "most extensive and thorough study of Josquin's life" (Charles, *A Guide to Research*, p.3), Noble is also cited because he establishes a different chronology for the masses based on more recent source criticism. Noble's work is thus appropriate for the present study.

[13] Noble, "Josquin Desprez," p.25.

period--which includes Josquin's work in Rome, France and Ferrara--exemplifies "the development and perfection of the technique of pervasive imitation based on word-generated motifs."[14] Finally, in the late period, "the relationship between word and note becomes closer than ever, and there is an increasing emphasis on declamation and rhetorical expression within a style of the utmost economy."[15] Figure 1-3 provides the chronology Osthoff establishes according to the criteria given above.[16]

Figure 1-3. Osthoff's Chronology of Josquin's Masses

Early: *Missa L'ami Baudichon*
Missa Ad fugam
Missa di dadi
Missa Gaudeamus
Missa Allez regretz
Missa Sine nomine
Missa D'ung aultre amer
Missa Une musque de Biscaye
Missa Fortuna desperata
Missa Malheur me bat
Missa Mater Patris

Mature: *Missa L'homme armé super voces musicales*
Missa Faisant regretz
Missa L'homme armé sexti toni
Missa La sol fa re mi

Late: *Missa Ave Maris Stella*
Missa Hercules Dux Ferrarie
Missa De beata Virgine

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[14] Ibid.

[15] Ibid.

[16] Osthoff's chronology is established in Volume I of his study. He discusses the early masses in pp.112-155, the mature masses in pp.156-172, and the late masses in pp.173-201.

Missa Da pacem
Missa Pange lingua

Figure 1-4 provides the revised mass chronology according to Noble.

Figure 1-4. Noble's Chronology of Josquin's Masses

Early: *Missa L'ami Baudichon*
Missa Une musque de Biscaye
Missa di dadi
Missa Faisant regretz
Missa Fortuna desperata
Missa Mater Patris
Missa Ad fugam
Missa sine nomine

Mature: *Missa Gaudeamus*
Missa Ave maris stella
Missa Malheur me bat
Missa L'homme armé super voces musicales
Missa L'homme armé sexti toni
Missa Hercules dux Ferrarie
Missa La sol fa re mi

Late: *Missa de beata virgine*
Missa Pange lingua

The six works chosen for this study have been drawn from Noble's first two stylistic periods. They include the following five masses: *Missa Fortuna desperata, Missa Ad fugam, Missa L'homme armé super voces musicales, Missa L'homme armé sexti toni* and *Missa La sol fa re mi*. The sixth work under consideration is a single mass movement, the *Credo De tous biens*. These pieces represent a variety of compositional techniques which create different problems for the analyst. *Missa Ad fugam* is a canon mass--

the tenor follows the superius in strict canon at the fifth throughout. *Missa Fortuna desperata* is a cantus firmus mass based on a popular song, as are the two *L'homme armé* masses. The two latter works illustrate contrasting uses of the same basic material. The most important difference between them lies in the treatment of their respective cantus firmi. In *Missa L'homme armé super voces musicales* the cantus firmus is transferred from voice to voice as it rises through the six steps of the natural hexachord (c-d-e-f-g-a) with each successive mass movement.[17] The mode of the cantus is consistent throughout *Missa L'homme armé sexti toni*. *Missa La sol fa re mi* is a cantus firmus mass based on a simple solmization motive, and illustrates Josquin's ability to create a complex work out of limited material. The *Credo De tous biens* was chosen because it illustrates the problematic nature of individual mass movements. Because these movements exist separately from any masses, there is a temptation to treat them as independent musical entities unrelated to the mass (which may be considered a complete cycle of dependent components). However, it is impossible to know whether the composer intended them as such; they may be surviving parts of a complete mass, or they may represent an unfinished work. Nonetheless, the *Credo De tous biens* is

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[17] This treatment of the cantus firmus creates a problem for modal classification of the mass, and is discussed in more detail in Chapter III, pp. 32-33.

included as one of six independent works under consideration in this study.[18]

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[18] Stylistic characteristics, scribal concordance and watermark evidence suggest that these six works may in fact comprise a coherent group of masses datable to Josquin's tenure in Rome. However, the establishment of these works as Roman masses is beyond the scope of this analysis paper.

CHAPTER II: APPROACHES AND ANALYTICAL TECHNIQUES

The application of linear analysis to pre-tonal music is still in its early stages, and there have been no uniform linear analytical methodologies or tools developed specifically for this music. However, some studies have provided convincing analyses of specific works, while others have proffered more general approaches to the analysis of the pre-tonal repertory, and many have successfully illustrated the possibility of reductive analysis in the context of modal music.

Peter Bergquist attempts to illustrate the relationship between theoretical treatises and music around 1500,[19] concluding that "theorists in the sixteenth century clearly made no close approach to defining tonal structure. Their theories of counterpoint . . . barely begin to deal with analysis in the sense in which we now know it."[20] In Bergquist's view,

> it would seem that Renaissance music displays characteristics of tonal coherence and directed motion similar to those in the music of later periods. Such coherence and direction in the most meaningful sense of the word constitutes the tonality of this music.[21]

---

[19] Peter Bergquist, "Mode and Polyphony around 1500. Theory and Practice," *The Music Forum* I (1967), pp.99-161.

[20] Ibid., p.159.

[21] Ibid.

He also concludes that, because it is relevant for the classification of mode, 15th- and 16th-century modal theory cannot be completely dismissed,[22] but at the same time it "can hardly be considered the only significant structural element that organizes [musical composition]."[23] We must therefore "use the contemporary theorists with reservations."[24] Bergquist's conclusions arise from his analyses, and he admits that more work is needed to obtain a fuller understanding of the tonal nature of Renaissance music.[25]

Bergquist does not deal with text-music relationships; his analytical technique follows Salzer's method.[26] Three of the four analyses contain a typical tonal *Ursatz* with the bass and soprano as structural voices, and each analysis presents graphs illustrating levels from detailed foreground to structural background. In the first of the analyses--of Antoine Brumel's motet *Mater Patris*--Bergquist shows a prolonged scale degree $\hat{5}$ as a common tone of the I and V harmonies.[27] This modification of the Schenkerian

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[22] Ibid.

[23] Ibid., p.161.

[24] Ibid.

[25] Ibid., pp.160-161.

[26] Felix Salzer, *Structural Hearing. Tonal Coherence in Music* (New York: Dover, 1962).

[27] Bergquist, "Mode and Polyphony," pp.126-134.

requirement for an upper voice descent to scale degree $\hat{1}$ has important ramifications for the analysis of pre-tonal music. In essence, Bergquist is stating that functional tonality can exist without a structural linear descent in any voice. In this analysis he also discusses in some detail the harmonic functionality of triads built on the fifth scale degree.

> When the dominant is a major triad the progression I-V-I is unequivocally harmonic. The combination of root movement by a descending fifth with the leading tone assures this with no possible doubt. But if V is a minor triad or an $\frac{6}{5}$, the harmonic quality is less explicit due to the lack of the leading tone.[28]

Bergquist is assuming that Renaissance composers held the same views about the function of V as we do, an assumption not supported by Renaissance theory. Generally, his analysis is sound, although one may question his placement of the structural $\hat{3}$-$\hat{2}$-$\hat{1}$ descent in some cases. For example, in the analysis of *Io non posso piu durare,*[29] a frottola attributed to "Aron,"[30] the superius structural scale degree $\hat{2}$ (the note e) is supported by a g triad in m.15. Not only does the e lack harmonic support, it is obviously part of a fourth-descent from g to d (in parallel sixths with the tenor voice) on its way to c. Bergquist labels the supporting triad "II6", but ignores the held

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[28] Ibid., pp.131-132.

[29] Ibid., pp.140-148.

[30] Ibid., p.140.

note d in the altus, and he does not justify his choice of the structural $\hat{2}$ in any way. Similarly, in the analysis of *Alles mon cor* by Agricola,[31] he places the structural descent and I-V-I in mm.41-2. The implication is that the piece is essentially over at this point, yet the text has not ended. There is no reason to dismiss the possibility that the d-a bass progression at mm.51-2 provides a structural plagal cadence for the work, and one suspects that mm.41-2 were chosen as the structural close for the piece simply because these measures contain the last "V-I" cadence in the work. Notwithstanding his attempt to find an *Ursatz* where there may not be one, and his assumption that the structural cadence must be V-I, Bergquist presents plausible analyses while illustrating that a structural descent is not essential for pre-tonal music.

Don Randel provides a perspective on the relationship between 15th-century composers and their music.[32] Specifically, he seeks a historical justification for applying the label "V-I" to those pitch successions in Renaissance music which sound like dominant-tonic cadences. He opposes the view that these successions are not V-I cadences because Medieval and Renaissance composers did not consider them such.[33]

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[31] Ibid., pp.148-159.

[32] Don M. Randel, "Emerging Triadic Tonality in the Fifteenth Century," *The Musical Quarterly* LVII/1 (1971), pp.73-86.

[33] Ibid., p.76.

> This view limits the historian's activities to a search for the composer's own analysis of his music --the composer's intentions, in one sense of the word--and this is clearly too limiting. Furthermore, it presents a practical problem in our present study: how can we say that one cadence is a V-I and another is not when they are indistinguishable in the score?[34]

The view stems from our belief that the cadence type presently labelled V-I was likewise understood by late 18th-century composers such as Mozart.[35] Although this may be true, analysis of late 18th-century music from the composer's perspective is not necessarily the best approach.[36]

> If, in talking about the late eighteenth century, we can keep *our* analytical statements separate from our statements about what we believe the *composer's* analytical view to have been, we shall have less difficulty in coming to terms with the fifteenth century. We need to be concerned primarily with discovering the best way for us to look at music and not exclusively with discovering the way it was looked at by its composer or his contemporaries. The historically justified interpretation, then, is the one which best helps us to make sense out of history.[37]

In other words, we may apply a V-I label to these 15th-century pitch successions because we use the same label for the same successions in later music. This approach allows the historian or analyst to "observe similarities in the compositions of different composers even if the composers

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[34] Ibid.

[35] Ibid.

[36] Ibid.

[37] Ibid., pp.76-77.

did not think of their own music in similar ways."[38] Randel, like Bergquist, minimizes the value of contemporary theoretical treatises. "The writings of the theorists . . . provide a *convenient starting point* for our inquiry into the circumstances surrounding fifteenth-century music."[39] Randel does not analyze any specific works. He concentrates on a non-historical approach to analysis with emphasis on the relative frequency of occurrence of the V-I cadence, and his work culminates in an abstract article. However, he proffers the following important principle: ". . . we are not obliged to hold that none of the features of triadic tonality can be present in a composition unless all are present."[40]

Richard Crocker broaches the polemic of vertical sonority in Medieval music in a more historically-oriented study than Bergquist's or Randel's.[41]

> Many feel that the medieval composer did not think of vertical sonority at all; or, if he did, only in abstract, mathematical terms. This view holds that medieval polyphony is "linear," that vertical sonorities are the product of intersecting melodic lines, and that these sonorities are fortuitous.[42]

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[38] Ibid., p.76.

[39] Ibid., p.77. Emphasis in italics is my own.

[40] Ibid., p.76.

[41] Richard L. Crocker, "Discant, Counterpoint, and Harmony," *Journal of the American Musicological Society* XV/1 (1962), pp.1-21.

[42] Ibid., p.1.

Such a view is, in Crocker's words, "hard to swallow,"[43] and is often carried over to later Renaissance music as well. (As Putnam Aldrich states, "sixteenth-century modal theory may be regarded as reflecting an extension and expansion rather than a dissolution of the [Medieval] modal system."[44] He asserts that modal theory was modified during the fifteenth and sixteenth centuries to accommodate the changes created by developments in polyphony.[45] Consequently, one may postulate that the same view of vertical sonority would logically carry over from Medieval to Renaissance music.) Crocker's premise is that the two-voice framework in Medieval music is a vertical conception, the third voice being simply an addition to the sonority. "If the first step is the composition of a progression of two-note chords, then the third voice is added not as a third melody but as enrichment of those chords."[46] He goes on to conclude that "if this is true, then Medieval composition is not more successive than our own. The really important difference is that the Medieval system uses a basic unit consisting of two notes, whereas we use a unit of three notes."[47]

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[43] Ibid.

[44] Putnam Aldrich, "An Approach to the Analysis of Renaissance Music," *The Music Review* XXX/1 (1969), p.2.

[45] Ibid.

[46] Crocker, "Discant, Counterpoint, and Harmony," p.12.

[47] Ibid., p.13.

Crocker produces no analyses in his study because his objective is to outline an analytical approach based on dyadic progression. However, he does draw attention to one feature of polyphony important to the analyst.

> Western part music, from then until now, depends upon a delicate balance between the demands of vertical sonority and those of voice-leading. Sometimes the balance is threatened by too much attention to the vertical or the linear dimension, but equilibrium is soon restored with the realization that each dimension is meaningless without the other.[48]

Putnam Aldrich also employs an approach different from Bergquist's and Randel's.[49] His goal is

> to summarize the principles according to which Renaissance musicians and theorists analysed the music of their time, and to show how these principles can be used to advantage by directing our attention to aspects of the music that were formerly regarded as of the utmost importance but are now customarily overlooked.[50]

He points out that "if we are to attempt to analyse Renaissance music in terms of the musical thought of the time we must examine these principles [of modal theory] and find out how they may be applied to specific musical compositions."[51] The analyst's approach should include consideration of several criteria: the discovery and tabulation of all cadences; the structure of the text and

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[48] Ibid., p.8.

[49] Aldrich, "An Approach to the Analysis of Renaissance Music," pp.1-21.

[50] Ibid., p.2.

[51] Ibid.

its relationship to the music; determination of the subject, or leading voice; the mode suggested or defined by the species of fourths and fifths upon which first the subject, then the other voices are based; the role of imitation (structural or incidental); and the harmonic structure.[52]

Aldrich provides some useful observations, especially concerning the species of fourths and fifths as factors in determining the mode and cadence *loci* of a piece.[53] However, his approach leads to descriptive commentary rather than analytical insight, as is evident in the two analyses accompanying his discussion.[54] Although Aldrich uses a form of reductive analysis, he attempts to derive a background for each work without providing a reading of the foreground elements. The music contains one structural voice--the tenor--and Aldrich employs simple reductions to outline its cadence tones. The species of fourth and fifth in the tenor provide the cadence *loci* for all the voices, and these interval species are outlined by open noteheads. In earlier short examples, Aldrich uses the same open noteheads for the interval species, but

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[52] Ibid., pp.11-12.

[53] Ibid., p.3.

[54] The analyses are of an anonymous (probably by Busnois) three-part textless piece entitled *Je suis venu* (late fifteenth century), and a four-part Josquin chanson *Plus nulz regretz*.

includes black noteheads to indicate other notes in the passages. The analytical method leads the reader to believe that there are only two types of events--those outlined by species of fourth and fifth deriving from the tenor (structural), and the others (non-structural)--and that within each type all notes are of equal structural importance.

Ten years after Aldrich's paper, Frederick Bashour shows displeasure with the current state of Renaissance analysis.

> Practically all the analysis of this repertory undertaken at both undergraduate and graduate levels exists as "enrichment" to other established courses, either as part of a traditional tonal form and analysis course or, more customarily, as occasional illustrative side-trips in the period lecture courses given by historians.[55]

He then asserts that "as long as treatment of the subject remains parochial and instructor dependent, rigorous and systematic coverage--in a manner analogous to that given to 'tonal' music--will seldom take place."[56] It is Bashour's intent to move toward the establishment of this "rigorous and systematic coverage." He approaches the analysis through the concepts of modal procedure and "the

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[55] Frederick J. Bashour, "Towards a More Rigorous Methodology For the Analysis of the Pre-Tonal Repertory," *College Music Symposium* XIX/2 (1979), p.140.

[56] Ibid., p.141.

discant idea."[57] Bashour concedes that neither of these concepts is new, but

> what is progressive . . . is the manner in which I have combined the melodic principles of Gregorian chant theory and the contrapuntal principles of discant theory--both disciplines undoubtedly understood by medieval and Renaissance composers--with the concepts of prolongation, structural levels, and essential voice leading, as first expressed in theories of Schenker.[58]

Thus Bashour, like Aldrich, is concerned with an approach combining an understanding of contemporary modal theory with modern analytical tools. He holds the view that three-part composition was "conceived within a two-voice framework," as is indicated by the discant treatises,[59] and that therefore this music is governed by dyadic progressions: "Thus from discant theory we may extract the concept of the music as a progression of intervals through time."[60] Bashour arrives at the following conclusions:

> If we accept the popular view that eighteenth- and nineteenth-century music is triadically conceived, and that tonal order can be explicated through a hierarchy of triadic prolongations, then it might be possible to view tonal order in the dyadically-conceived medieval and Renaissance repertory in terms of a hierarchy of prolongations of dyads.[61]

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[57] Ibid.

[58] Ibid.

[59] Ibid., p.149.

[60] Ibid.

[61] Ibid., p.152.

Furthermore,

> the tonal prolongations present in the dyadically-tonal music of the Middle Ages and the Renaissance [are] dependent upon the procedures and syntactic relationships implicit in the various modes and their respective tonal units, which are the sonorities composed of the characteristic species of fifth and fourth.[62]

Clearly, his views of dyadic structure closely resemble those postulated by Crocker seventeen years earlier.

Cristle Collins Judd has criticized Bashour's use of the Schenkerian technique for failing to point out a fundamental structure or background.[63] But Judd has missed the point of Bashour's article. He does not pretend to search for a fundamental Schenkerian background in his analyses; he is simply highlighting tonal relationships in this music through a modified Schenkerian technique. If there were to be criticism of his analytical method, it would be directed against his notation. Like Aldrich, Bashour uses only open and black noteheads to illustrate tonal relationships, and there is no regard for tonal hierarchy in the analysis. Again, there is an implication of two types of events--structural and non-structural--and that within each type all notes are equivalent. Furthermore, Bashour's conclusions about the music's background elements are not clearly defined.

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[62] Ibid.

[63] Cristle Collins Judd, "Some Problems of Pre-Baroque Analysis: An Examination of Josquin's *Ave Maria . . . virgo serena*," *Music Analysis* IV/3 (1985), p.222.

> The general avoidance of parallel perfect consonances in the foreground (primary discant procedure) and the apparent embracing of them as a unifying feature in the "background" might suggest to some that this music has different rules for different hierarchic levels! It might also suggest, if one views the work as a series of ♯ prolongations, that there is no "background" at all. Another view more in keeping with an explicative theory based on modal syntax, is that the "background" is simply the ordered set of modal structural pitches employed as cadential loci.[64]

Although these problems exist with his analysis, Bashour must be commended for his attempts to approach Renaissance music analysis systematically in order to create a "more rigorous [analytical] methodology."

Cristle Collins Judd presents a more standard Schenkerian analysis in her study of Josquin's motet *Ave Maria . . . virgo serena.*[65] She also proposes a combination of historical and analytical methodologies.[66]

> Historical description and analysis when taken separately may provide an unbalanced perspective of the music; certainly as regards the music of the Renaissance, it is only through the broadest possible view that convincing analyses are to be obtained.[67]

Judd's goal is to

> obtain a 'period' understanding of the work and from this formulate analytical tools based on contemporaneous theoretical concepts, to examine the musical

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[64] Bashour, "Towards a More Rigorous Methodology," p.152.

[65] Judd, "Some Problems of Pre-Baroque Analysis," pp.201-39.

[66] Ibid., p.201.

[67] Ibid.

> object and to place the work in its broader historical context.[68]

The five areas of music to be considered are "text, mode, articulation of structure [cadences, imitation and formal divisions], pitch organization and tonal structure."[69]

Clearly, Judd's approach is similar to Aldrich's, Crocker's and Bashour's. While her graphing technique is based on Salzer's,[70] her analysis takes text-music relationships into account, and the reduction of the complete work is intriguing. She provides two graphs, one for each analytical methodology:

> voice-leading graphs are able to demonstrate longer-term motion, connection and structure while reflecting motivic modal considerations; cadential graphs illustrate more immediate components of that structure, formal articulation and contemporaneous theoretical concepts.[71]

The voice-leading graphs consist of two foreground, two middleground, and one background graph, all of which are indistinguishable from a standard tonal Schenkerian reduction. There is a prolongation of scale degree $\hat{3}$ with a harmonically-supported descent through $\hat{2}$ to $\hat{1}$. The graphs show motivic connection at all structural levels,

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[68] Ibid.

[69] Ibid.

[70] Ibid., p.229. Her technique is after Salzer, *Structural Hearing. Tonal Coherence in Music.* As was mentioned above, Peter Bergquist also followed Salzer's technique (cf. discussion pp.8-11).

[71] Ibid., p.224.

and indicate prolongational events and tonal hierarchies clearly. The main weakness of Judd's work is the contradiction of the linear graphs by the cadential graph. This graph seems to highlight different structural elements than the linear graphs--for example the prolongation of scale degree $\hat{1}$ in the upper voice, and the apparent conflict of the final structural cadence between the tenor of this graph and the bass/*Urlinie* of the linear graphs. Although she has justified use of the cadential graph in relation to contemporaneous modal theory, it confuses rather than clarifies the issues put forth by the linear analysis. The graphs imply contradictory conclusions and leave the reader wondering if it is relevant to use them together.

There appear, then, to be at least two approaches to the analysis of Renaissance music. Bergquist and Randel represent the first, which uses a modern analytical system placing little or no value on contemporary treatises. The second--exemplified in the works of such scholars as Aldrich, Bashour and Judd--advocates a combination of historical considerations with modern analytical tools. Both approaches assume Renaissance composers possessed some concept of vertical organization. Both have resulted in provocative analyses and have provided useful methodologies for analysis; neither has resulted in a widely-accepted analytical doctrine. According to Bergquist and Randel,

the use of modern analytic tools to identify tonal characteristics in pre-tonal music is justified outside the context of contemporaneous theory. However, an understanding of late 15th- and early 16th-century modal construction and counterpoint rules is essential to such analyses: one cannot understand the dissolution of modality if one has not first grasped the basic concept of the modes or the rules of counterpoint.

Randel has pointed out the analytic advantage of not attempting to decipher the composer's intentions, but the exclusive use of a "historically justified interpretation" may actually misinterpret the music. If the analyst chooses not to consider the composer's intentions, he must at least attempt to understand the theoretical background out of which the music arose. Then he can identify the passages anomalous to contemporary theory, analyze those anomalies using modern analytical tools, and draw conclusions from the data. Otherwise, he runs the risk of looking for characteristics to support presuppositions he may have drawn from his historically-justified perspective.

Searching for a Schenkerian *Ursatz* in pre-tonal music creates precisely this risk. The temptation is to fit the piece to the analytical process--to create, so to speak, a "Procrustean bed"[72] for the music--and this is

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[72] My thanks to Dr. Brian Harris for this highly descriptive and suitable phrase.

where Salzer, Bergquist and Judd have strayed. Schenker developed his method to explicate the hierarchical relationships of the tonal system. However, the analyst of Renaissance music may not be dealing with a tonal-hierarchical basis for musical composition; thus he cannot work from the premise that reductive analysis will reveal a tonally coherent background. Since the analyst can not assume the presence of such a background in Renaissance music, the search for an *Ursatz* is not a principal analytical consideration. In fact, revelation of a tonally coherent background is not a prerequisite for this analytic process.[73] Schenker often proves this point in *Der freie Satz*, because he analyzes sections within tonal works. True, these sections usually reveal relationships at only fore- or middleground levels, but they are analyzed outside the consideration of the fundamental structure. Consequently, the same analytic process is valid for highlighting and discussing tonal idioms in pre-tonal music. The lack of an *Ursatz* in a modal piece should not affect the tonal relationships in a section of that work. The only difference between a modal and a tonal composition is that in the latter this section would be further reflected in some background aspect of the work, while in a

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[73] Bergquist's analysis of Brumel's *Mater Patris* clearly indicates that no structural descent is necessary in pre-tonal music (see pp.9-10, above), but the hypothesis presented here extends to the structural I-V-I as well.

modal piece a background may or may not exist. It is valid, then, to use an analytic process finely attuned to tonal idioms to explicate those same idioms in "modal" compositions, and linear analysis is such a process.

The goal of the present analysis, therefore, is not to seek actively a fundamental tonal background in selected Josquin masses, but to investigate apparently idiomatically tonal sections in them. Specifically, the analysis concentrates on two tonal characteristics--triadic arpeggiation/prolongation and the concept of a "tonic" or central chord. (The latter point is essential, because there can be no tonal hierarchy without there first being a tonic as musical goal defined by a secondary structural sonority.) These characteristics are evident in Josquin's treatment of cadences, the tenor/superius framework, sequence and imitation. Textual influence will be considered and discussed where relevant, but this study refrains from a detailed investigation of text/music relationships because of the relative consistency of sectionalization offered by the mass.[74]

Analytical terminology will generally avoid terms and symbols normally used in tonal analysis. For example, the cadence with a bass falling fifth or rising fourth beneath a sixth-octave dyadic progression will be called a

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[74] Appendix 1 lists the major textual divisions in the Josquin masses considered in this study.

bass fifth cadence (B5) rather than an authentic cadence represented by the Roman numerals V-I. Similarly, cadences exhibiting a plagal relationship with the bass falling a fourth will be labelled B4, and so on. Stepwise cadence motion in the bass will assume one of two descriptors: "full linear cadence" for those which resemble the tonal "VII6-I" cadence; and, "incomplete linear cadence" for motion which can be heard in tonal terms as a half cadence (e.g. IV-V, IV6-V, II-V). Cadences not subsumed by these terms are rare and will be discussed individually. The term "harmonic progression" may be out of place since there is no apparent tonal hierarchy in this music, so terms such as "chord succession" will be used instead. The word "tonicized" will be applied to the goal chord of cadences, as well as to prolonged secondary tonal areas when those areas are defined by strongly stated cadential formulae. Upper-case letters are used to designate chords or tonal areas (e.g. C major); lower case letters with superscript numbers are used to identify specific pitches by octave designations beginning with c^1, the lowest c on the piano.

Since the object of this paper is to investigate apparently idiomatically tonal passages in the music, a slightly modified form of Schenkerian analysis will be employed. Chords will not be labelled with Roman numerals, or described as "tonic," "dominant," and so forth. A triad that appears to exhibit hierarchical primacy in a section

or movement will be called the "central triad" or "central sonority." The term "structural" is reserved for triads or sonorities prolonged at the deepest levels of the music. The structural "defining chord" is the sonority which exhibits the closest tonal relationship with the structural central chord, and is similar in concept to the structural V in a tonal work. It often supports $\hat{2}$, and is usually in a fifth relationship above the central chord, although it may also be a step above.[75]

Scale degree numbers ($\hat{1}$,$\hat{2}$,$\hat{3}$ etc.) will be applied to structural melodic notes as a matter of convenience. However, the numbers are simply an indication of the position of the notes above the final of the mass or movement. Slurs and beams indicate prolongational dependency. Stemmed notes represent deeper structural levels than unstemmed, and the deepest levels of structure are shown by stemmed open notes. The flag is reserved for neighbouring motions at higher structural levels. Finally, neighbouring and passing tones are indicated by the symbols N and P respectively, with IN representing the incomplete neighbour.

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[75] The structural chord that exists in stepwise relationship with the tonic is Salzer's *contrapuntal-structural* chord (see Salzer, *Structural Hearing* Vol. I, pp.160-161).

CHAPTER III: MODES AND COUNTERPOINT

In Western music the term *mode* has several meanings, the most significant of which is "scale type or melody type."[76] Josquin's music is rooted in Medieval modal theory.

> In the first part of the 16th century theorists began to use first the eight medieval modes of Gregorian chant and then also an extended system of 12 modes to account for such features of polyphonic music as the choice of cadential pitches and of pitches for the opening imitative entries, as well as to specify aspects of range and contour in individual melodic lines.[77]

This modal system

> originated as a doctrine borrowed by eighth- and ninth-century Carolingian monks from medieval Greek Christianity and applied to the classification of single-line melodies used in the Western Catholic liturgy.[78]

Putnam Aldrich asserts that "sixteenth-century modal theory may be regarded as reflecting an extension and expansion rather than a dissolution of the modal system."[79]

The Medieval system consisted of four authentic and four corresponding plagal modes which were constructed

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[76] *The New Grove Dictionary of Music and Musicians* (1980), s.v. "Mode" by Harold S. Powers.

[77] Ibid., p.377.

[78] Harold S. Powers, "Tonal Types and Modal Categories in Renaissance Polyphony," *Journal of the American Musicological Society* XXXIV/3 (1981), p.428.

[79] Putnam Aldrich, "An Approach to the Analysis of Renaissance Music," *The Music Review* XXX/1, p.2.

from "four distinct varieties or species of pentachord--rooted on d^1, e^1, f^1, g^1--and a like number of tetrachord species--rooted on a^1, b^1, c^1, d^1."[80] Pentachords and tetrachords were a series of diatonic steps and half steps covering the intervals of perfect fifth and perfect fourth respectively. There were four possible orderings of tones (T) and semitones (S) for the species of fifth (pentachord): TSTT, STTT, TTTS, TTST.[81] These pentachords corresponded respectively to the Dorian (beginning on d), Phrygian (beginning on e), Lydian (beginning on f) and Mixolydian (beginning on g) modes.[82] Three possible orderings existed for the species of fourth: TST, STT, TTS.[83] The Dorian and Mixolydian modes incorporated the first species of fourth, the Phrygian mode the second and the Lydian mode the third.[84] The pentachord/tetrachord pairs were conjoined to create the modes.[85] The octaves arranged with the species of fifth on

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[80] Leo Treitler, "Tone System in the Secular Works of Guillaume Dufay," *Journal of the American Musicological Society* XVIII/2 (1965), p.132.

[81] Ibid.

[82] Ibid.

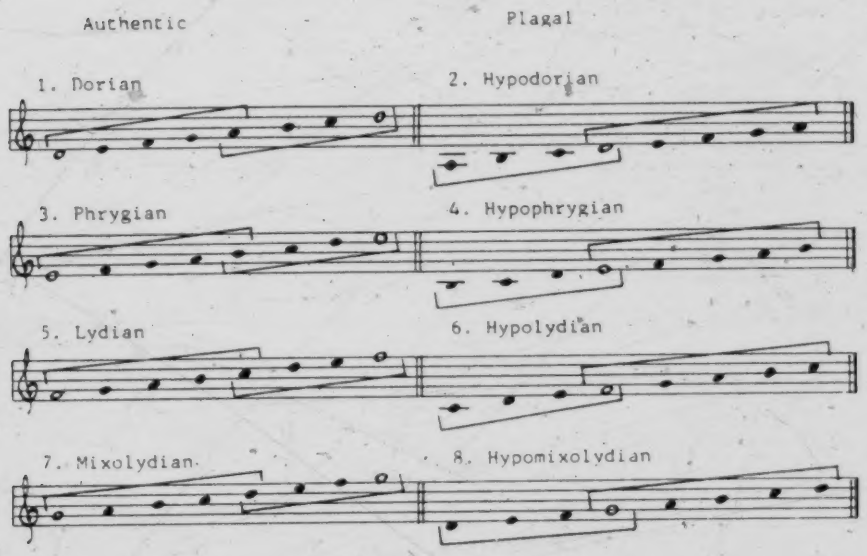
[83] Ibid.

[84] Ibid.

[85] Ibid.

the bottom were the authentic modes; those with the species of fourth on the bottom were the plagal modes.[46] Figure 3-1 illustrates the eight modes.

Figure 3-1. The Eight Medieval Modes.



In the mid-sixteenth century, Heinrich Glarean expanded the modal system by defining four additional modes.[47] The Aeolian mode with plagal Hypoaeolian exhibited the first species of fifth (TSTT) and second species of fourth (STT). The Ionian/Hypoionian pair was a conjunction of the fourth species of fifth (TTST) and third

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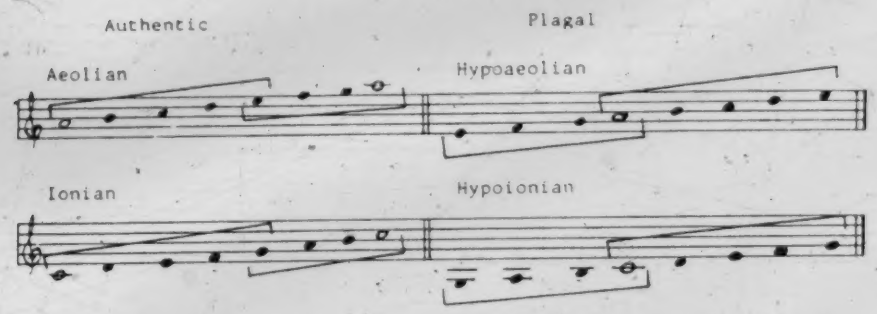
[46] Peter Bergquist, "Mode and Polyphony around 1500: Theory and Practice," *The Music Forum* I (1967), p.103.

[47] Heinrich Glarean, *Dodecachordon Volume I*, translation, transcription and commentary by Clement A. Miller (American Institute of Musicology: 1965). See especially Book I, Chapters 1-7, pp.103-121.

species of fourth (TTS). These additional modes are illustrated in Figure 3-2.

Figure 3-2. Glarean's Four Additional Modes.



Polyphonic developments during the Renaissance made modal classification more difficult than it had been. "Aaron's method of determining mode in polyphony was essentially to consider the mode of the tenor part to be the mode of the whole complex of voices."** Aldrich provides a similar though more general rule: "The mode to which a polyphonic composition is attributed is said to be that of its leading voice--that is, the mode of the voice that determines its principal cadence tones."** The principal defining factors which decide the mode of the tenor--or leading voice--are the final (the note on which

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** Bergquist, "Mode and Polyphony around 1500," p.102. Bergquist makes this point in reference to portions of Aaron's *Trattato della natura et cognitione di tutti gli tuoni di canto figurato* (Venice 1525; supplement 1531) which appear in translation in Oliver Strunk, *Source Readings in Music History* (New York: Norton 1950), pp.205-218.

** Aldrich, "Analysis of Renaissance Music," p.3.

the melody ends) and the ambitus above or below the final.[90] Also crucial to the classification of mode is the species of fourth or fifth emphasized by internal cadence points.[91]

The problem with this method of classification is reconciliation of the mode of the tenor to that of the other voices. For example, the cantus firmus in *Missa L'homme armé super voces musicales* rises by step through the course of the mass. The five movements take the cantus up the six steps of the natural hexachord (Figure 3-3). Perkins shows that the piece has a central tone

Figure 3-3. Rising Cantus Firmus in *Missa L'homme armé super voces musicales.*

Kyrie:	C
Gloria:	D
Credo:	E
Sanctus:	F
Agnus:	G (mm.1-36)
:	A (mm.63-187)

(finalis) of D despite the shifting cantus firmus.[92] In general, the note c is regularly used as an initial pitch in the Dorian mode.[93] Therefore, the changing cantus exhibited in Figure 3-3 above could be a reflection of the

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[90] Bergquist, "Mode and Polyphony around 1500," p.102.

[91] See for example Treitler, "Tone System," pp.133-134 and Perkins, "Mode and Structure," pp.198-202.

[92] Perkins, "Mode and Structure," p.203.

[93] Ibid., p.200.

Dorian mode with an initial pitch on c followed by an ascent up the species of fifth to a. However, if, in modal classification, the melody must end on the finalis, D can be the final for the Gloria alone.

The cantus melody in this mass ends before the final cadence of virtually every movement and section. There follows, in most cases, a short closing passage which cadences on D. Also, the D finalis is often established by the remaining voices at the beginnings of movements and sections before the cantus firmus enters. These passages offer an explanation for the classification problem created by this work. Because of the shifting cantus, Josquin chose a central tone (D) as the unifying factor for the piece. The note d is tonally (or modally) logical because of its close relationship to five of the six members of the ascending hexachord outlined in the movements. If this is the case, the tenor in this mass has little to do with the classification or definition of its mode.

The idea that a central tone may be a unifying factor in modal music raises a terminological issue for the terms "finalis" and "tonic." Bergquist all but equates the two.[94] In this study, the term "central tone" will be used instead of "tonic." Thus, the central tone of a work is the one around which the music centers, but does not

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[94] Bergquist, "Mode and Polyphony around 1500," p.102. His specific words are that a final is "analogous to a tonic."

necessarily imply the tonal-hierarchical associations of a tonic. However, the notion of centricity--that all musical events relate to the central tone--is still evident in the term.

Another problem for the analyst of Renaissance polyphonic composition is the so-called two-voice framework.[25] "On the whole, therefore, we now readily acknowledge the presence of a conscious plan governing the behaviour of individual lines and governing even the progression of vertical two-voice sonorities."[26] The framework should be an independent contrapuntal entity, but Josquin often breaks the rules of two-part counterpoint in the voice pair. This strongly implies that, at times, the vertical construction of the music is more important than the individual voices which create it. It also implies

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[25] Benito V. Rivera, "The Two-Voice Framework and Its Harmonization in Arcadelt's First Book of Madrigals," *Music Analysis* VI/1-2 (1987), 59. Rivera cites other significant contributions in this area of study including Knud Jeppesen, *Der Kopenhagener Chansonnier* (Copenhagen/Leipzig: Breitkopf und Härtel, 1927); Bernhard Meier, "Die Harmonik im cantus firmus-hältigen Satz des 15. Jahrhunderts," *Archiv für Musikwissenschaft* IX (1952), 27-44; Richard L. Crocker, "Discant, Counterpoint, and Harmony," *Journal of the American Musicological Society* XV/1 (1962), pp.1-21; Howard M. Brown, "The Genesis of a Style: The Parisian Chanson, 1500-1530," *Chanson and Madrigal, 1480-1530*, ed. James Haar (Cambridge, Mass.: Harvard University Press, 1964), 1-36; Carl Dahlhaus, *Untersuchungen über die Entstehung der harmonischen Tonalität* (Kassel/Basel: Bärenreiter, 1968); Ernst Apfel, "Der klangliche Satz und der freie Deskantsatz im 15. Jahrhundert," *Archiv für Musikwissenschaft* XII (1955), 297-313.

[26] Rivera, "The Two-Voice Framework and Its Harmonization," p.59.

that the tenor is sometimes treated as an inner voice supported by a structural bass.[97]

The most significant counterpoint treatise for Josquin's generation was Tinctoris's *Liber de Arte Contrapuncti* (*The Art of Counterpoint*) of 1477.[98] Tinctoris "inaugurated a new manner of treating counterpoint in theoretical writing, which later writers followed for a century or more . . . [he] and his successors concerned themselves . . . with the vertical rather than the horizontal aspect of melodic combination."[99] The third book of *Liber de Arte Contrapuncti* provides eight general rules "to be observed in all counterpoint."[100] These rules may be summarized as follows:

1 All counterpoint should begin and end with a perfect concord (open fifth or octave).

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[97] Although these implications give rise to a variety of questions, the answers (or attempted explanations) for the questions are beyond the scope of the present study. To attempt any answers would require diligent study of a much broader selection of Renaissance works. A study of this nature would necessarily encompass a wide range of musical styles and genres, as well as a large selection of representative composers.

[98] Johannes Tinctoris, *Liber de Arte Contrapuncti*, translated and edited by Albert Seay ([Rome]: American Institute of Musicology, 1961).

[99] Bergquist, "Mode and Polyphony around 1500," p.108.

[100] Tinctoris, *Liber de Arte Contrapuncti*, p.132. What follows is a summary of the eight rules, which may be found in *Liber*, pp.132-140.

2 Parallel perfect intervals are not permitted.

3 Both perfect and imperfect concords may follow one after another as long as the tenor remains stationary.

4 Counterpoint should be as smooth as possible, especially if the tenor is very disjunct.

5 No perfect intervals are allowed which will remove the tenor from its mode.

6 Repetitions (motivic) should be avoided except in cases where a specific affect is desired.

7 Two or more perfections must not be made continuously in the same place.

8 The goal of counterpoint is to achieve variety.

In Book I, Tinctoris discusses the possiblities for dyadic progressions in counterpoint both above and below the tenor. For example, he illustrates how a third may follow a unison, how a sixth may follow a third, and so on through the simple and compound intervals up to the twenty-second.[101] In general, the tenor and *contrapunctus* are completely free as long as neither voice leaps by more than a fifth. The exceptions are few; the most notable involves the interval progression of the fifth after the sixth. A fifth may follow a sixth above or below the tenor only if

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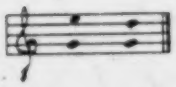
[101] The last entry on this subject deals with how a twenty-second below the tenor may follow another twenty-second below (Tinctoris, *Liber* p.82). He goes on to explain that "this twenty-second, as well as the twentieth, the nineteenth and the seventeenth can have, however, many other concords after themselves, but I have left these out for the reason that I have decided rationally not to go beyond the triple diapason, which these would exceed" (Tinctoris, *Liber* pp.82-82).

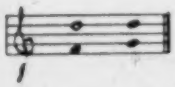
the tenor remains stationary.[102] Example 3-1 illustrates this rule. Presumably, the rule is a prohibition against

Example 3-1. How a Fifth may Follow a Sixth According to Tinctoris.

a) Above the tenor



b) Below the tenor



what is now called "hidden fifths"--the progression of two voices leaping in the same direction to a perfect fifth. Cases of the tenor leaping by more than a fifth are briefly covered in the last chapter of the book. The rule in such cases is that the counterpoint should move to the nearest concord.[103]

In the preceding chapter of this study it was proposed that the analyst of Renaissance music must grasp both the basic elements of modal theory and the rules of counterpoint. Consideration of these elements gives rise to a wide range of analytical questions. How (if at all)

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[102] Tinctoris, *Liber de Arte Contrapuncti*, pp.36-37.

[103] Ibid., p.83.

does the music reflect the species of fourth and fifth inherent in the the mode of the piece? To what extent is the dyadic structure of the two-voice framework reflected in the triadic elements of the music?[104] Does the *cantus prius factus* taken from plainchant affect the tonal constructs of the piece differently from a folk song or contrived cantus? Furthermore, to what extent do the Medieval modal system and Tinctoris's rules of counterpoint account for musical events, and where do they fail? Although investigation of these questions is beyond the scope of this study, modal and contrapuntal characteristics will be taken into account when they affect tonal considerations.

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[104] This question is the focal point of Rivera, "The Two-Voice Framework and Its Harmonization." Rivera concludes that the framework "lend[s] a sense of direction, even predictability, to the progression of the skeletal structure" (p.81).

CHAPTER IV: TRIADIC ARPEGGIATION

In his discussion of foreground-level arpeggiation, Schenker indicates in *Der freie Satz* that "an arpeggiation of the first order ascends to the first tone of the fundamental line."[108] The six Josquin works considered in this study exhibit foreground melodic events which arpeggiate triads, often apparently establishing an upper-voice *Kopfton*. These events may occur in single phrases structures, or in antecedent/consequent phrases; they are found in both isolated foreground passages and deeper-level musical structures. The arpeggiations take place in one, two, three or all four voices simultaneously, in both imitative and non-imitative textures. Four-voice arpeggiations often result in deeper-level prolongations of specific triads.

The superius voice frequently establishes $\hat{3}$ as an important upper-voice note. A particularly clear example occurs in mm.1-9 of the Agnus Dei from *Missa Ad fugam*, reproduced in Example 4-1. The essence of the superius passage in mm.1-4 is a $\hat{1}$-$\hat{3}$ arpeggiation through a passing $\hat{2}$, over a prolonged G-minor triad. The superius reaches down from the a^4 in m.2 to an inner voice d^4 in m.3 before

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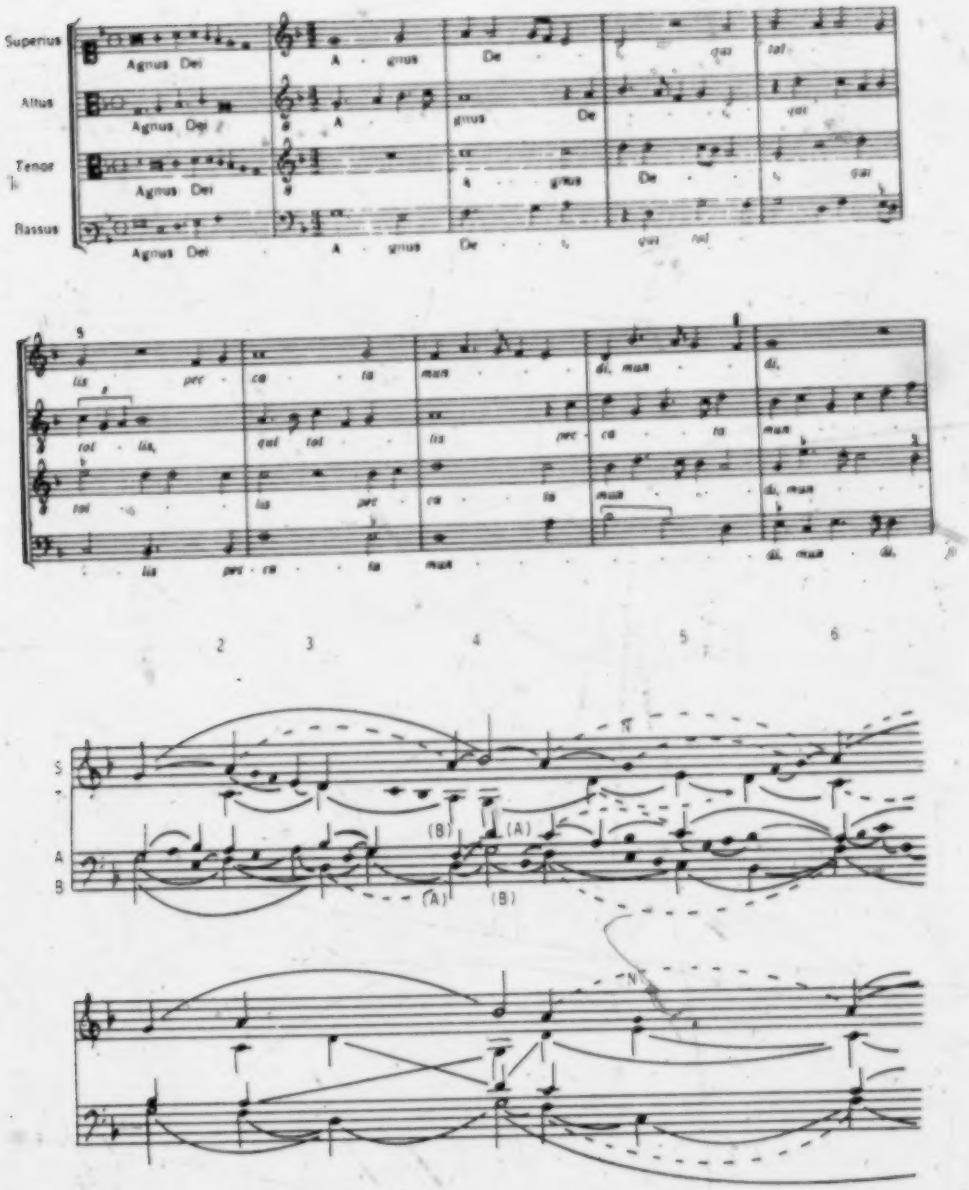
[108] Heinrich Schenker, *Free Composition (Der freie Satz)*, translated and edited by Ernst Oster (New York: Longman, 1979), p.46.

Example 4-1. *Missa Ad fugam,* Agnus Dei mm.1-9 with reductions.[108]



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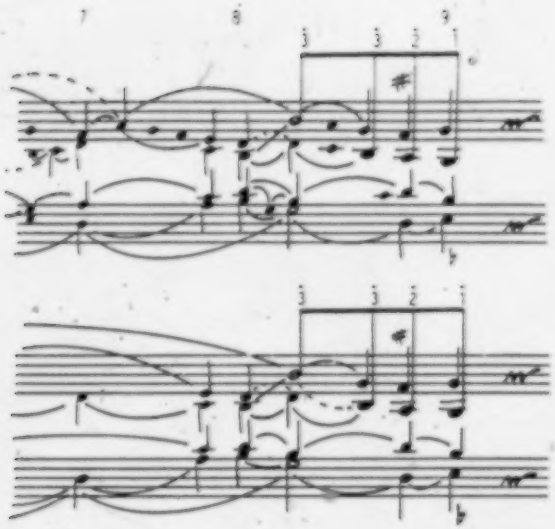
108 This and all subsequent musical examples are reproduced from *Werken van Josquin des Prez. Missen,* edited by A. Smijers (Amsterdam: Vereniging voor Nederlandse Muziekgeschiedenis, 1952-1963).

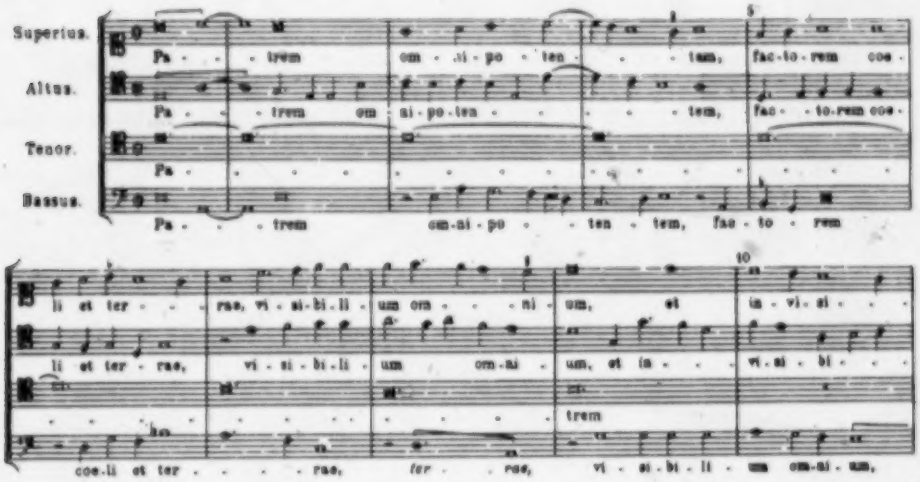


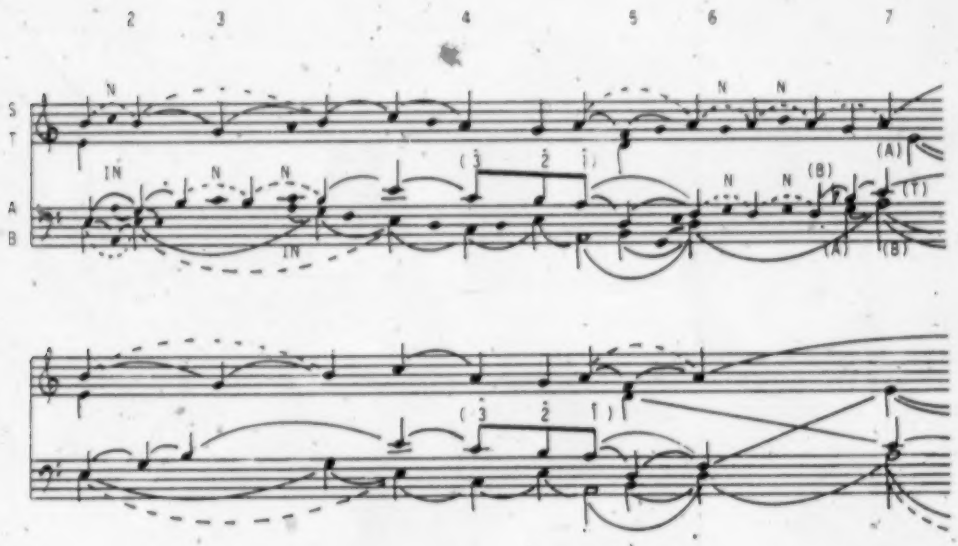
resuming on a⁴ and continuing up to b♭⁴. This b♭ is prolonged by an extended neighbour a⁴ (mm.4-8), which is supported first by an F triad (mm.4-6), then by a D triad (mm.7-8). The b♭⁴ is reiterated in m.8, and is followed by a cadence on a G triad with a $\hat{3}$-$\hat{2}$-$\hat{1}$ descent occurring in the tenor. The counterpoint surrounding this descent seems to be a preparation for a B5 cadence, but the bass steps up a second instead of leaping up a fourth and the deceptive resolution sustains the musical motion. Nonetheless, the superius arpeggiation from g⁴ to b♭⁴ (with reference to d⁴) in the first nine measures apparently establishes a $\hat{3}$ *Kopfton* over a G-minor triad.

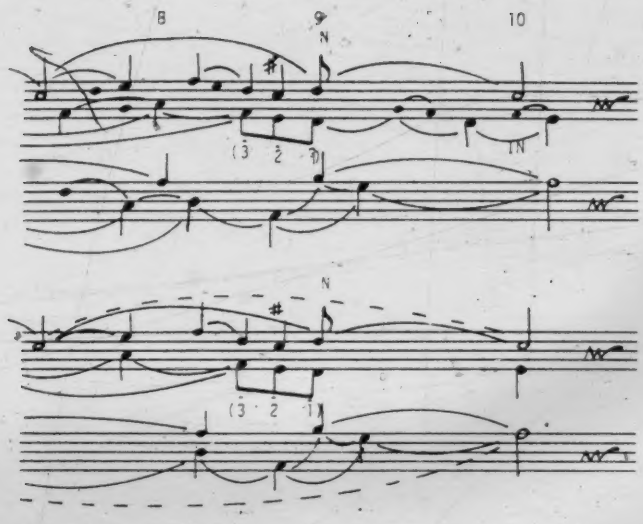
The three remaining voices are also distinct entities capable of arpeggiating triads at different levels. For example, the altus plays an important role in

organizing motives during the opening measures of the *Missa La sol fa re mi* Credo (see Example 4-2). The altus arpeggiates up an octave through an E-minor triad (from e³

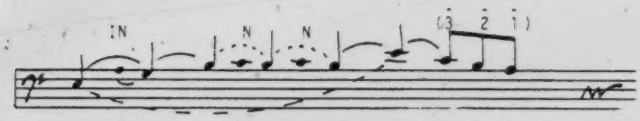
Example 4-2a. *Missa La sol fa re mi,* Credo mm.1-10 with reductions.







Example 4-2b. Isolation of the altus line, mm.1-4 from Example 4-2a.



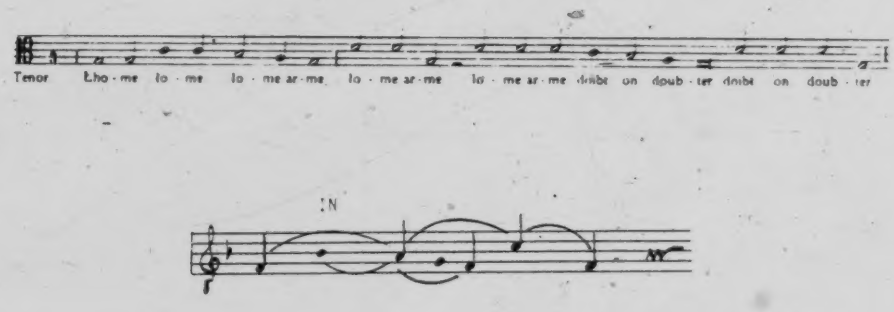
to e^4), and when the arpeggiation is complete, it descends to a^3 for the cadence on an A-minor triad, providing a sixth-octave dyadic progression ($b^3/g\sharp^4$-a^3/a^4) with the superius. Furthermore, the altus arpeggiation is integrated with the opening melodic event from the superius. The goal of the passage is the structural A-minor triad achieved in m.4 and prolonged until m.10. Measures 1-2 in the altus contain the incomplete neighbour (IN) motion a^3-g^3 in parallel tenths with the c^5-b^4

neighbour in the superius, and the altus then twice reiterates the b-c-b motive one octave lower in mm.2-3. The c^5 from the superius neighbour motion is apparently established as a structural $\hat{3}$ over an A-minor triad in m.7, and the subsequent measures (mm.7-10) are a transposed elaboration (one step higher) of the original superius b^4-c^5-b^4 motive. The c^5 from m.7 is displaced by a tonicized d^5 in m.9; the d in turn falls back to c in m.10. The altus in the these measures provides the opposite neighbouring motion e^4-d^4-e^4 for a sixth-octave-sixth dyadic progression with the superius, and the result is an expanded neighbour motion deriving from the opening superius motive. Thus the original neighbouring c^5 is transformed into a structural scale degree $\hat{3}$, emphasized by its own upper neighbour d^5.

The cantus firmus voice in Josquin's masses is most often the tenor. Occasionally, however, Josquin places the cantus in one of the other voices, or elaborates on the tenor cantus melody. The opening Kyrie of *Missa L'homme armé sexti toni* provides one example of the latter treatment. Example 4-3 compares the triadic outline of the original melody with Josquin's variation of that melody in the tenor voice, in mm.1-10 of this Kyrie. The essential change occurs in mm.9-10, in the second half of the phrase, where Josquin fills in the falling fifth with a third. The

basic outline of the original melody is a triad arpeggiated through root, third and fifth, followed by an immediate return to the root (Example 4-3a). In its opening form in the tenor of *Missa L'homme armé sexti toni*, the melody is presented as an arpeggiated $\hat{1}$-$\hat{3}$-$\hat{5}$, balanced, at the middleground level, by a $\hat{5}$-$\hat{3}$-$\hat{1}$ mirror image (Example 4-3b, mm.9-10, lower slurs). However, the a^3 in m.9 prolongs the

Example 4-3a. Opening phrase of the *L'homme armé* melody, with reduction.[107]



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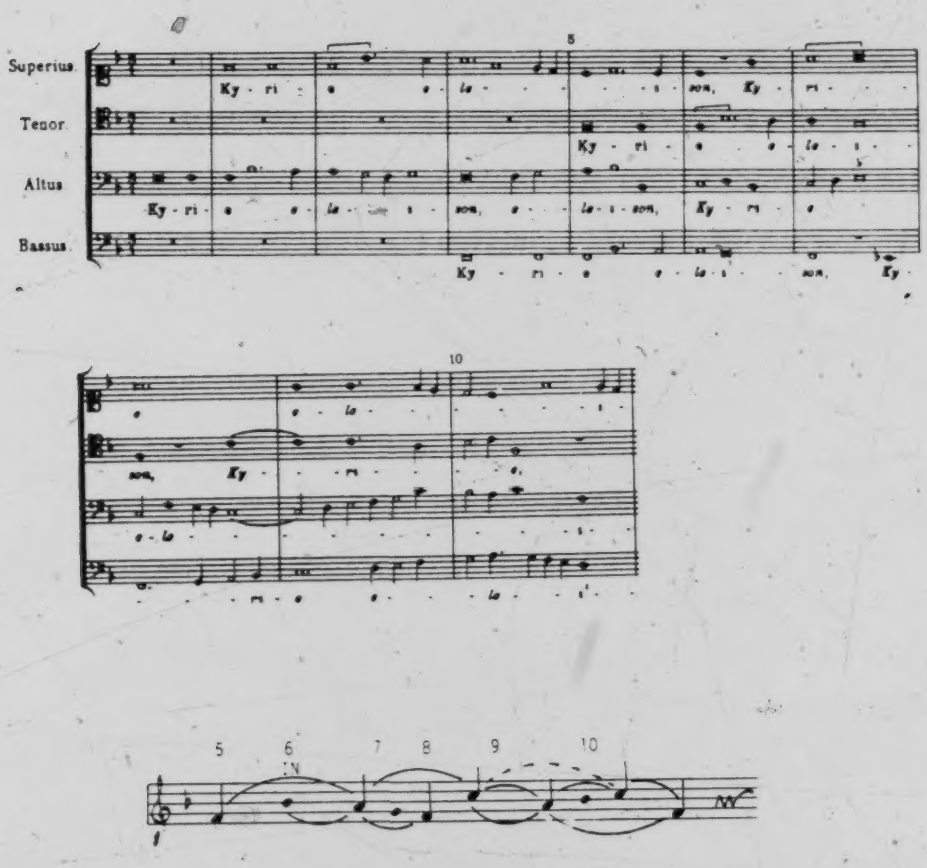
[107] The melody is found in Smijers, Vol.I, p.v of the prefatory material for *Missa L'homme armé sexti toni*. In the edition, the melody is presented in its original mixolydian mode. Since the melody is transposed to start on F in the mass, I have similarly transposed the original melody from Smijers for the purpose of comparison.

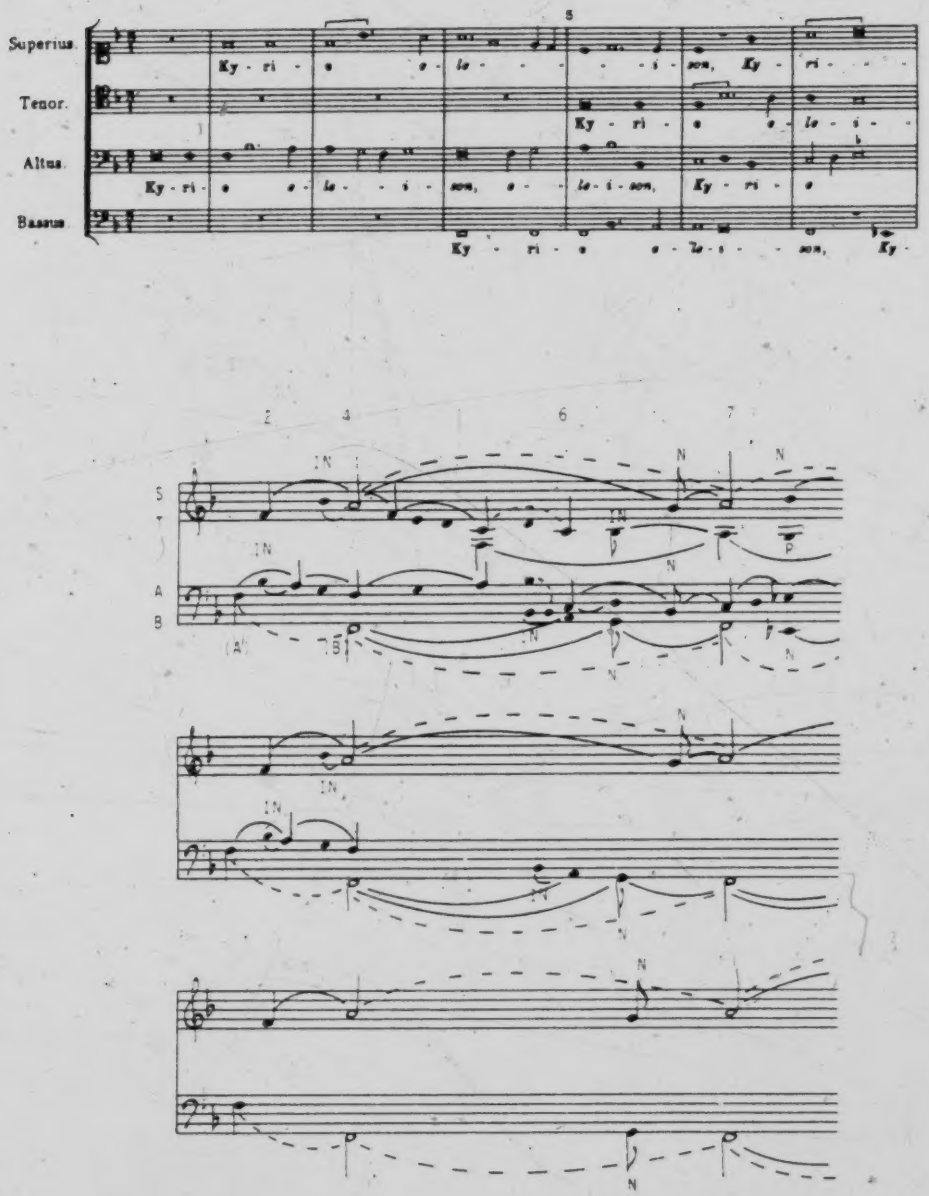
The term *sexti toni* refers to the sixth, or hypolydian mode. Although this mode normally has a finalis F and a range from c-c (see discussion on modes and cadence tones, especially p.30, Figure 3-1), it has been transposed to begin on F. Such a transposition would hypothetically create a finalis on B♭ (thus the one-flat key signature), but in fact B♭ is seldom used as a structural tonal area in this mass. Proponents of Glarean's theory of twelve modes would call this a transposed *Ionian* mode. A case such as this emphasizes the problems inherent in modal theory in the late Renaissance. Detailed investigation of such problems, however, is beyond the scope of the present study.

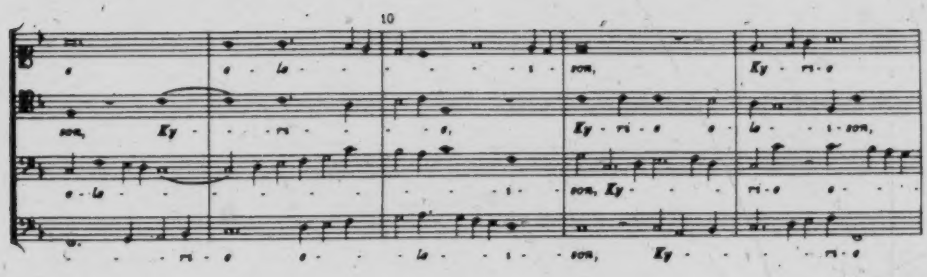
Example 4-3b. *Missa L'homme armé sexti toni*, Kyrie mm.1-10 with reduction of tenor.

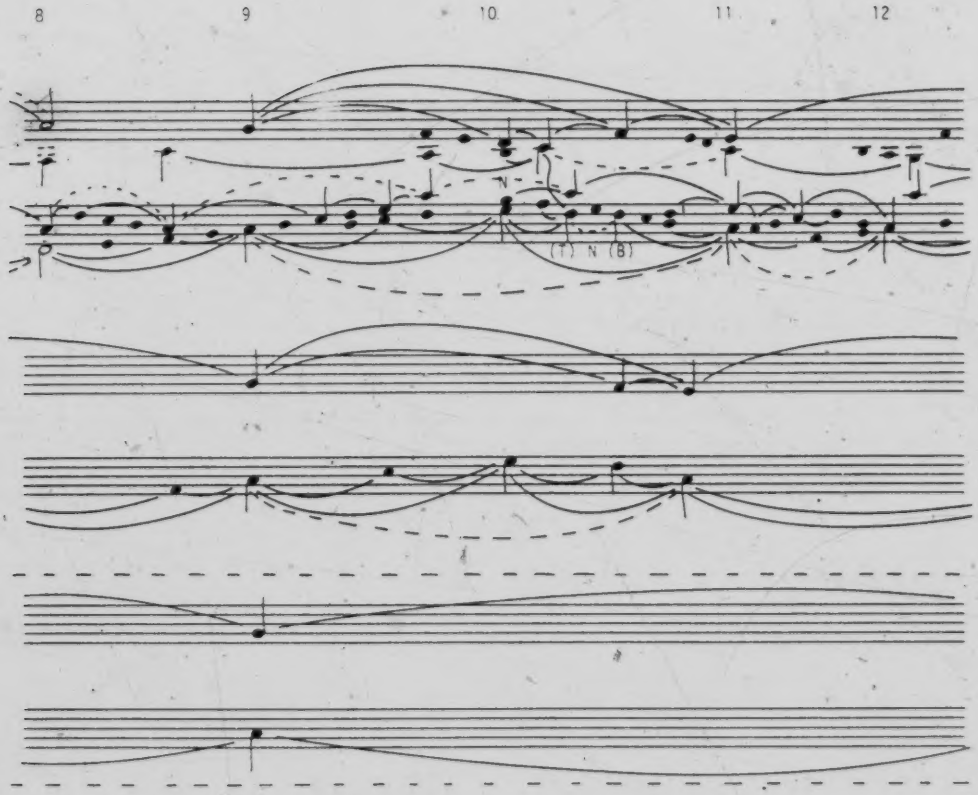


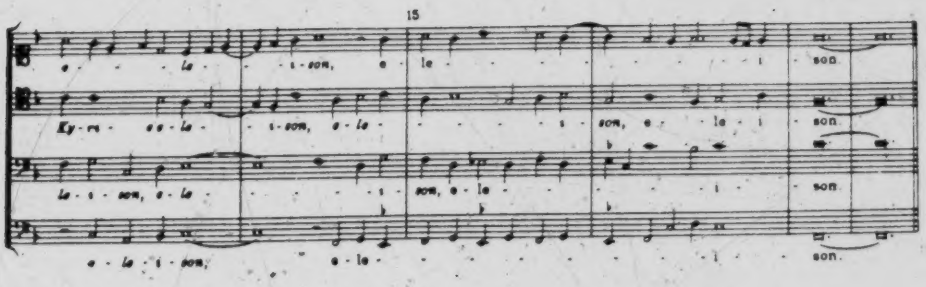
deeper-level c^4-f^3 falling fifth, and this prolongational characteristic of the a^3 is realized in the counterpoint of mm.9-10. The descending triad inherent in the tenor's embellished descending fifth is not fully realized until mm.15-16 where the tenor a^3 becomes part of a structural descent to f^3 to close the section. The complete opening Kyrie of *Missa L'homme armé sexti toni* is reduced in Example 4-3c.

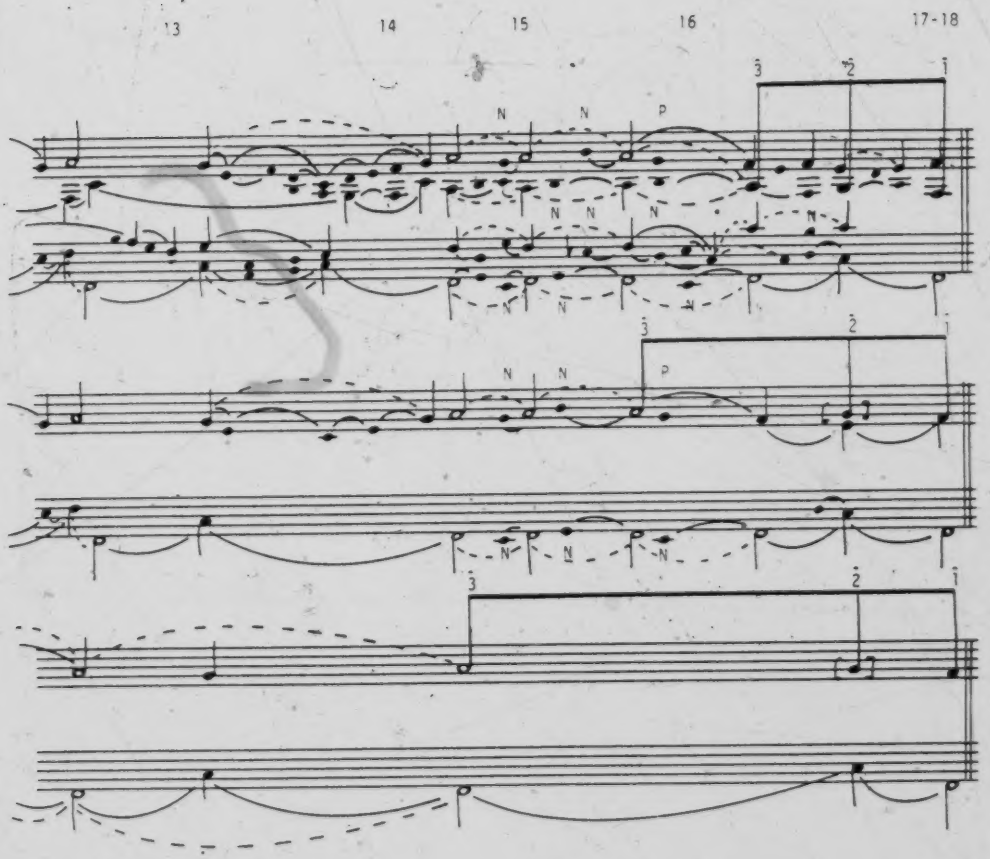
Example 4-3c. *Missa L'homme armé sexti toni*, Kyrie mm.1-18 with reduction.




10
e - le - - - - - - i - son, Ky - ri - e
son, Ky - - - ri - - - e, Ky - ri - e e - le - - i - son,
e - le - - - - - - - - - i - son, Ky - - - ri - e e - - -
- - ri - e e - - le - - i - son, Ky - - - - ri - e

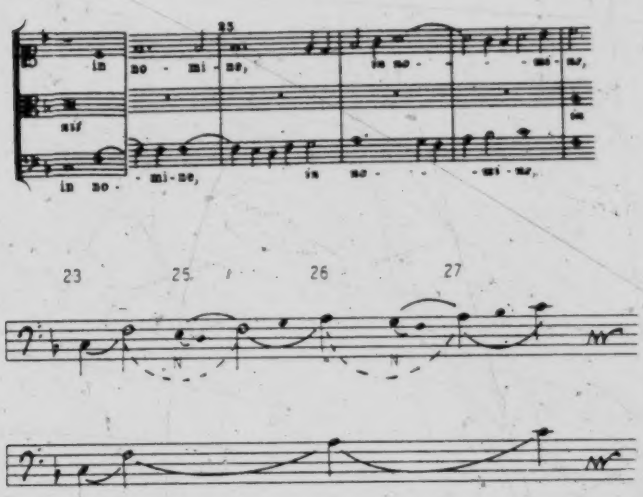

8
9
10
11
12
N
(T) N (B)


15
e - le - i - son, e - le - i - son.
Ky - ri - e e - le - i - son, e - le - i - son, e - le - i - son.
le - i - son, e - le - i - son, e - le - i - son.
e - le - i - son, e - le - i - son.


13
14
15
16
17-18
N
P

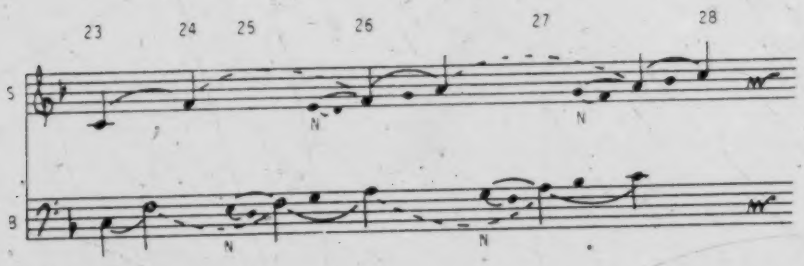
The bass voice also arpeggiates triads, as for example in the Benedictus section of *Missa Fortuna desperata*, where in mm.23-28 the bassus clearly outlines an F triad (Example 4-4). The preceding measures exhibit both

Example 4-4a. *Missa Fortuna desperata*, Benedictus mm.23-28 with reduction of bassus.



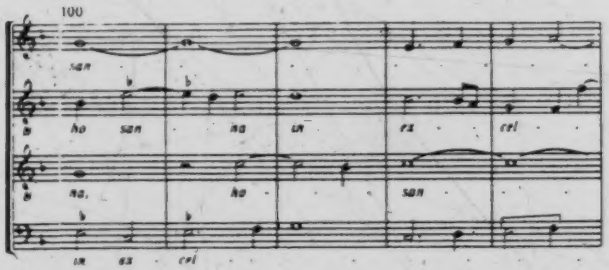
motion from an F-major to a C-major triad (mm.17-20) and prolongation of that C triad (mm.20-23). In the second half of m.23 there is a return to the central F sonority, and it is here that the bassus rises through the F triad, generating an arpeggiation that is imitated by the superius (Example 4-4b). The bassus arpeggiation spans $\hat{1}$-$\hat{3}$-$\hat{5}$ (f^3-a^3-c^4) and returns to $\hat{1}$ in m.28, thus prolonging the F-major triad and creating harmonic stasis before the subsequent return to C in m.34.

Example 4-4b. Reduction of bassus and superius from Example 4-4a.



Arpeggiation of triads by voice pairs frequently occurs in these masses, but two examples will suffice to illustrate the technique.[108] The first is taken from the Sanctus of *Missa Ad fugam*, and involves superius and tenor (Example 4-5a). A special problem is created here because

Example 4-5a. *Missa Ad fugam*, Sanctus mm.100-116.



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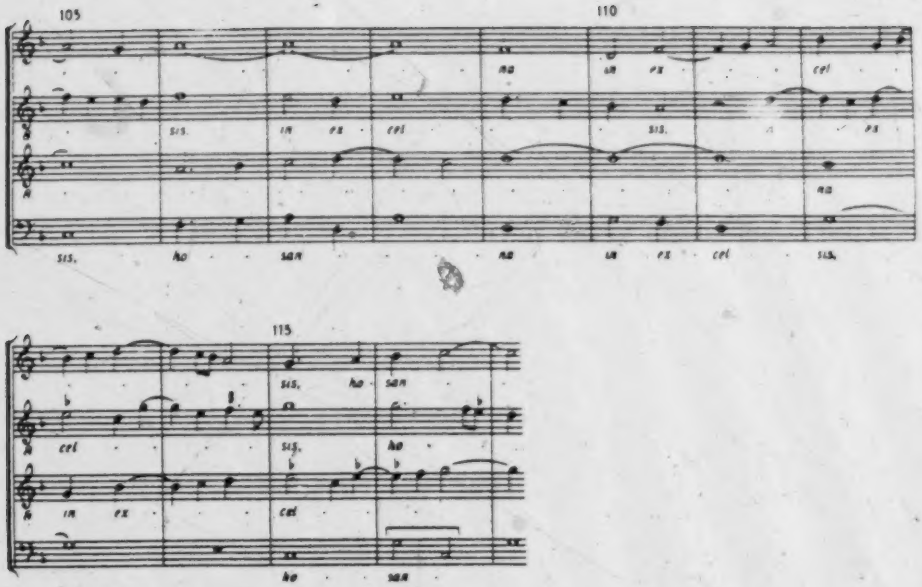
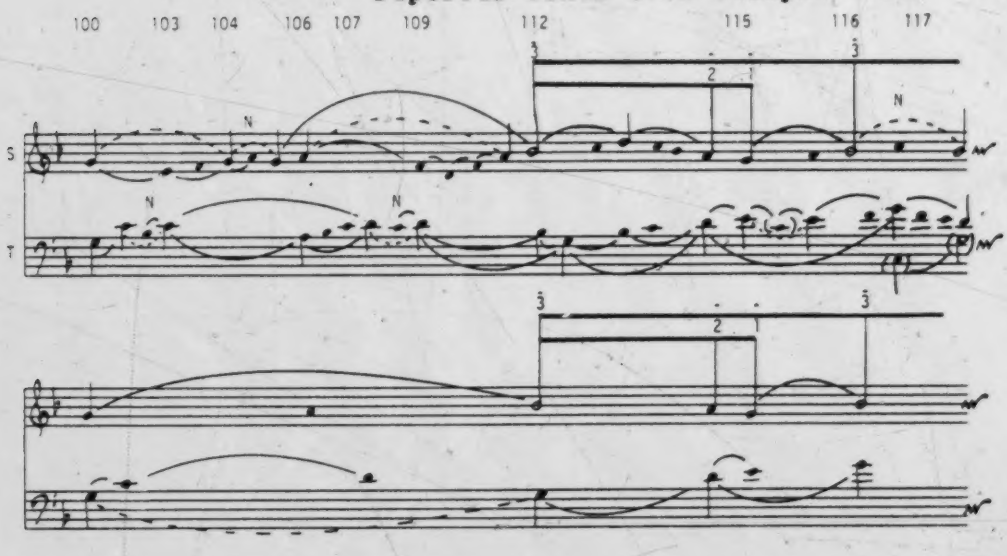
[108] Other examples include mm.181-187 of the Credo from *Missa Fortuna desperata* (tenor and superius), mm.55-62 of the Credo from *Missa La sol fa re mi* (bassus and altus), and mm.43-50 of the Credo from *Missa L'homme armé sexti toni* (superius and altus). Many other examples can be found in these six Josquin works and in other Josquin masses, but tabulation of every instance of arpeggiation by voice pairs in Josquin's mass repertory would be a monumental and arduous task generating data of questionable value.



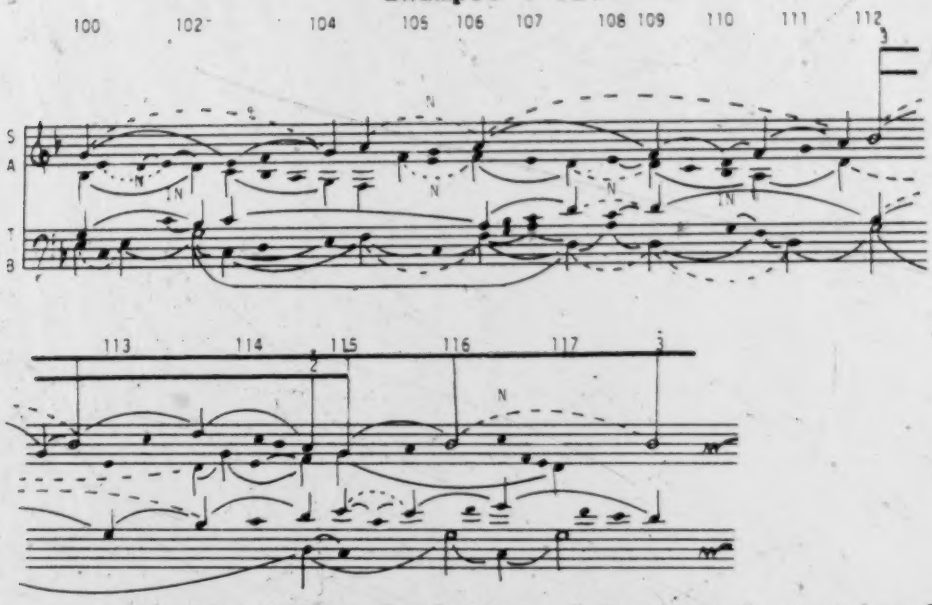
the two voices are in strict canon, the tenor following the superius at the fifth below. The two voices, when considered outside the four-voice context, have virtually identical middleground melodic outlines (Example 4-5b).

Example 4-5b. Isolation and reduction of tenor and superius lines from example 4-5a.

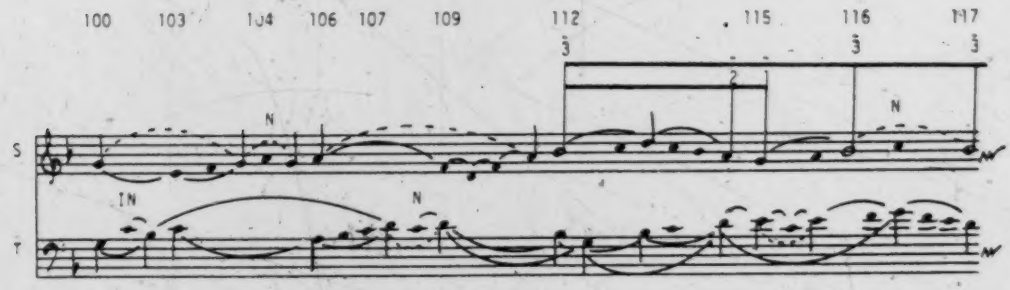


Considered as threads within the contrapuntal fabric, however, the two lines assume slightly different points of melodic emphasis. Example 4-5c is a reduction of the complete texture for these measures, and Example 4-5d is an isolation of the tenor and superius lines from this reduction for comparison with Example 4-5b.

Example 4-5c. Reduction of complete texture of Example 4-5a.



Example 4-5d. Isolation of tenor and superius lines from Example 4-5c.



The passage is clearly an extended arpeggiation of a prolonged G-minor triad. The superius reaches down from g^4 to an inner voice d^4 in m.110 before climbing to $b\flat^4$ in m.112 and to d^5 in m.113, ultimately returning to g^4 in m.115. The superius ascent to $b\flat^4$ recurs in m.116, and is followed by the structural descent for the movement (mm.116-127).[109] The tenor arpeggiates from g^3 in m.100 to $b\flat^3$ in m.102. The g^3 is an overlap completing the preceding section of the canon, and the c^4 that resumes the canon in m.101 acts here as an incomplete neighbour to the $b\flat^3$. The tenor eventually climbs to d^4--supported by a D-minor triad--in m.107, and is prolonged (along with the triad) until it falls back through $b\flat^3$ to g^3 in mm.112-113. The g-$b\flat$-d arpeggiation is then greatly condensed in mm.114-115, and the full octave arpeggiation is completed when the tenor reaches the g^4 in m.116.

The bassus and altus exhibit an interesting

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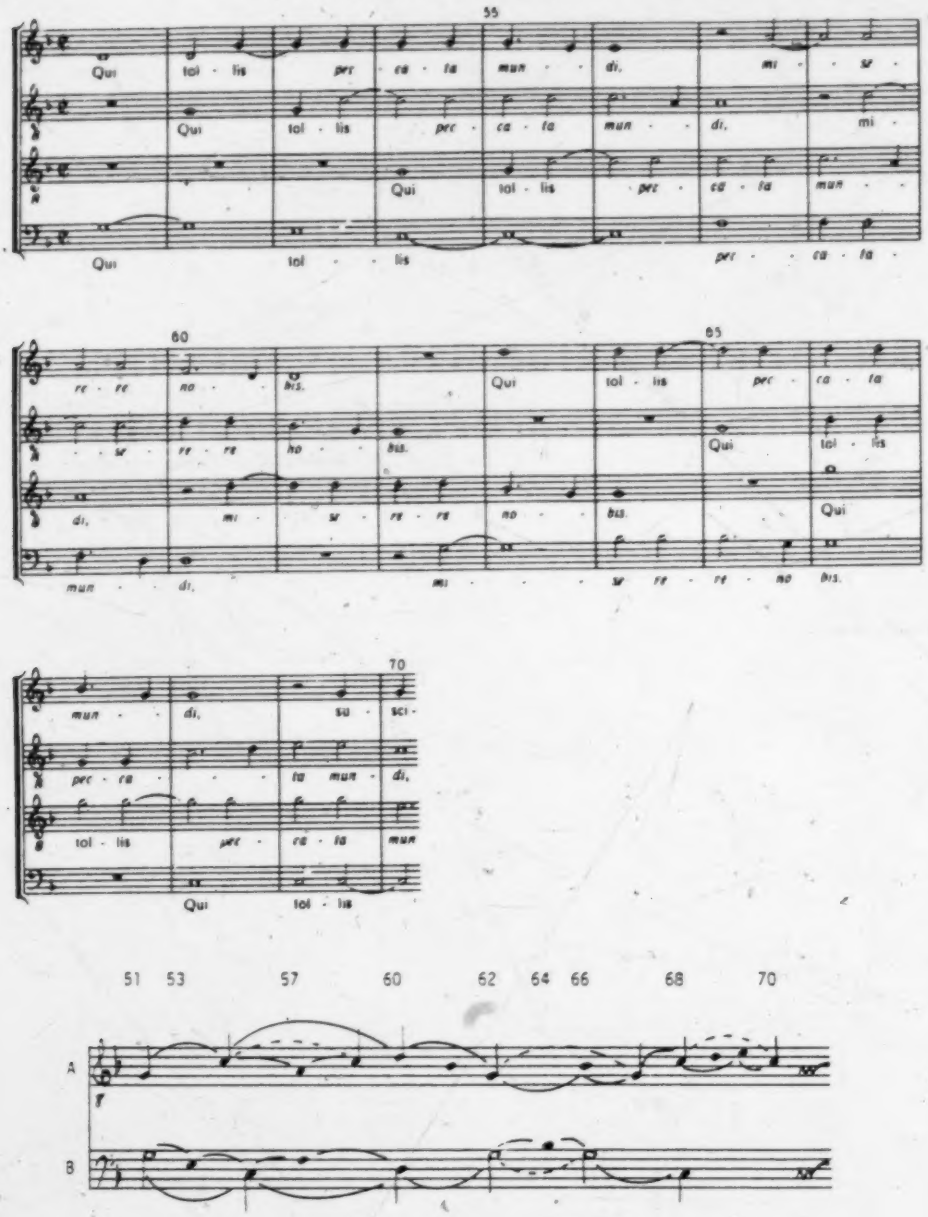
[109] The $\hat{3}$ is transferred to the tenor in m.124, so the structural descent actually occurs in that voice, and not in the superius.

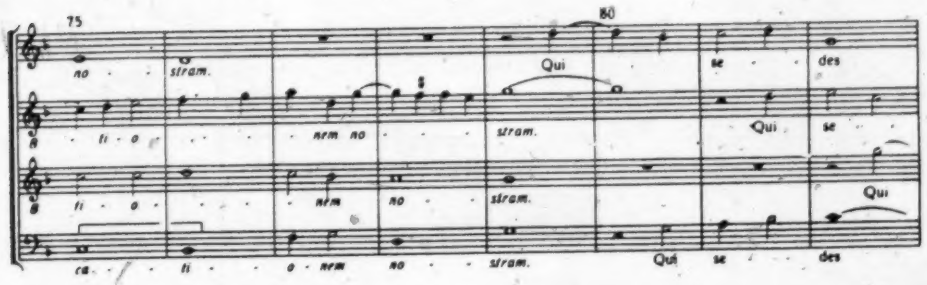
arpeggiation in a section of the Gloria from *Missa Ad fugam* (Example 4-6). Although the mass in general, and this

Example 4-6a. *Missa Ad fugam*, Gloria mm.51-70 with reduction of bassus/altus.



section of it in particular, tend to center around a G final (and thus, with the one-flat key signature, a G-minor triad),[110] a subversive bassus/altus pair in this passage weakens the sense of G minor as a central sonority. The bassus, with its opening g^3-e^3-c^3 gesture (mm.51-56), reveals a C triad, and this becomes an issue for the altus voice, which slowly arpeggiates the same triad in the opposite direction--g^3-c^4-e^4. Although the prevailing structural sonority in this section is G minor, the arpeggiation of the C triad creates harmonic ambiguity until m.77 (Example 4-6b). At this point the altus

Example 4-6b. *Missa Ad fugam*, Gloria, mm.75-82.



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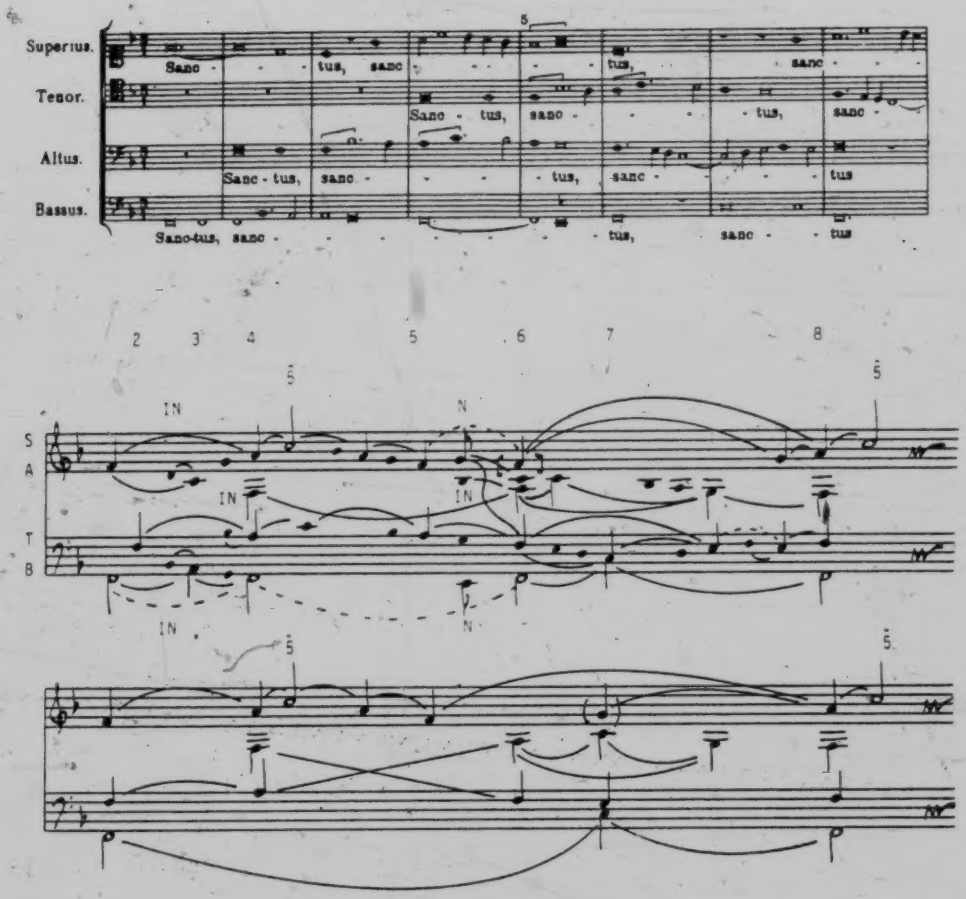
[110] Perkins notes the G finalis in this piece, and also stresses the presence of G as an important internal cadence tone in the work. See Leeman L. Perkins, "Mode and Structure in the Masses of Josquin," *Journal of the American Musicological Society* XXVI/2 (1973), pp.205-206.

reaches up to g^4 to supersede the superius as the upper voice, and it clearly re-establishes the G finalis supported by the central G-minor triad at the cadence in m.79.

Deeper-level triadic arpeggiation in these six works occurs in all four voices simultaneously, in both imitative and non-imitative textures. Analysis of the excerpt reproduced in Example 4-7 reveals a four-voice arpeggiation

Example 4-7. *Missa L'homme armé sexti toni*, Sanctus mm.1-8, with reductions.



of an F-major triad in the non-imitative opening of the Sanctus from *Missa L'homme armé sexti toni*. This introductory passage firmly establishes F major as the central sonority in the movement. The superius first reaches down from f^4 to an inner-voice c^4 (through an IN d^4) before ascending to a^4 and then c^5 in m.4. At this point it turns around and descends by passing motion through the F triad, reaching down to the inner-voice c^4 again. In mm.7-8 the ascent to c^5 through a^4 is repeated. The altus climbs from f^3 through a^3 to c^4 and falls back to f^3 by passing motion in its opening statement from mm.2-6. It then descends to the bass c^3, joining the bassus on the root of the C-major chord in mm.6-7, and climbs back to f^3 in m.8. The tenor is in strict imitation at the unison with the altus for these opening measures, but its descent to c^3 is supported by a bass f^2 in an F-major context. The bassus in this passage arpeggiates first from f^2 to a^2 through an incomplete neighbour $b\flat^2$, and then falls back to f^2 before completing the arpeggiation by leaping to c^3 in m.7, and cadencing on f^2 again in m.8.

The arpeggiations at the beginning of the Sanctus from *Missa L'homme armé sexti toni* are generated from the opening phrase of the cantus firmus melody.[111] The phrase, or variations of it, permeate all four voices, with each

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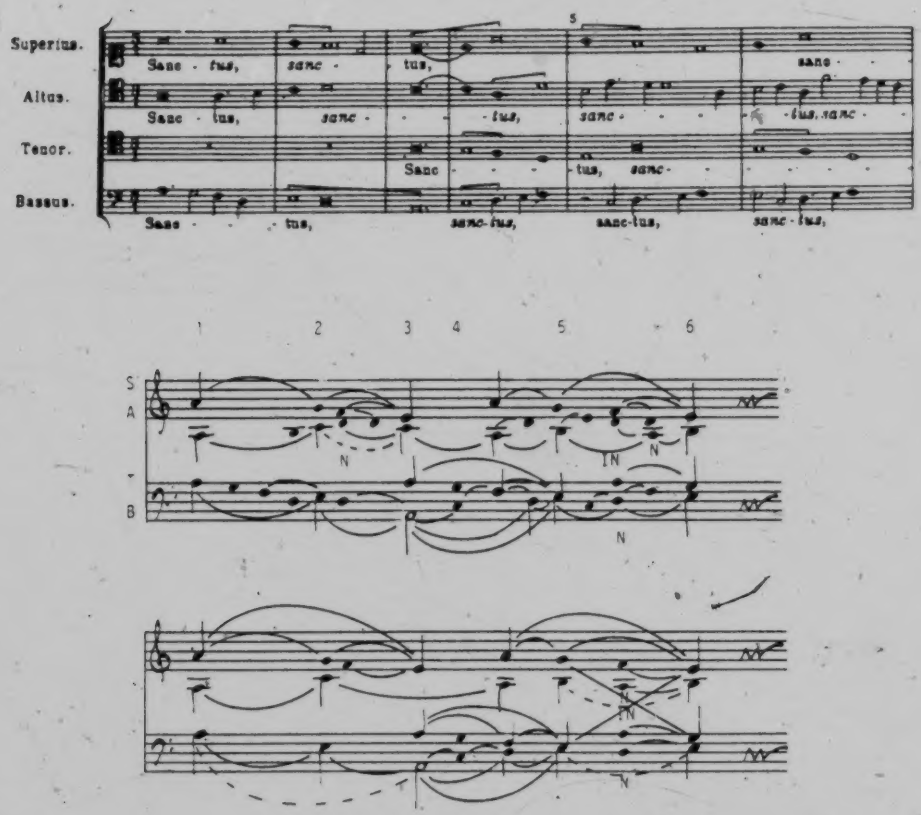
[111] The reader is referred to the discussion of that opening phrase on pp.45-46 of this study.

voice slowly unravelling an F-major triad. Passing and neighbouring motions in this passage generally lack harmonic support, and the result is more a sustention than a prolongation of F major. However, Josquin also arpeggiates and prolongs triads while providing rich and varied harmonic support for non-structural tones.

The Sanctus from *Missa La sol fa re mi* (Example 4-8) begins with another four-voice arpeggiation in

Example 4-8. *Missa La sol fa re mi*, Sanctus mm.1-6 with reductions.



non-imitative texture. In this passage, however, the superius, imitated by the tenor, simply alternates between $\hat{1}$ and $\hat{5}$, while the altus and bassus provide full arpeggiations of an A-minor triad. As the reductions show, the altus ascends from a^3-c^4 (mm.1-2), falls back to a^3 (m.4), and finally leaps up to e^4 (heard in the context of an E-minor triad) in m.5. The bassus is the most active voice in the passage. It descends a fourth from a^3 to e^3, and falls to a^2 through an interpolated d^3. The bassus then ascends to the e^3 (which is actually provided by the tenor in m.5), through the c^3 and d^3 in m.4. Thus, the analysis reveals an arpeggiation of a central A-minor triad in the first four measures, and the attainment of an E triad in m.5. The E triad is prolonged from mm.6-10, and is followed by a cadence on A in m.11.[112] In contrast to the harmonic stasis in the opening measures of the Sanctus from *Missa L'homme armé sexti toni* (discussed in connection with the preceding example), this passage disguises the prolonged central triad with shifting harmonies under a relatively static superius melody.

The imitative opening of the Christe section from *Missa La sol fa re mi* (Example 4-9) is harmonically static.

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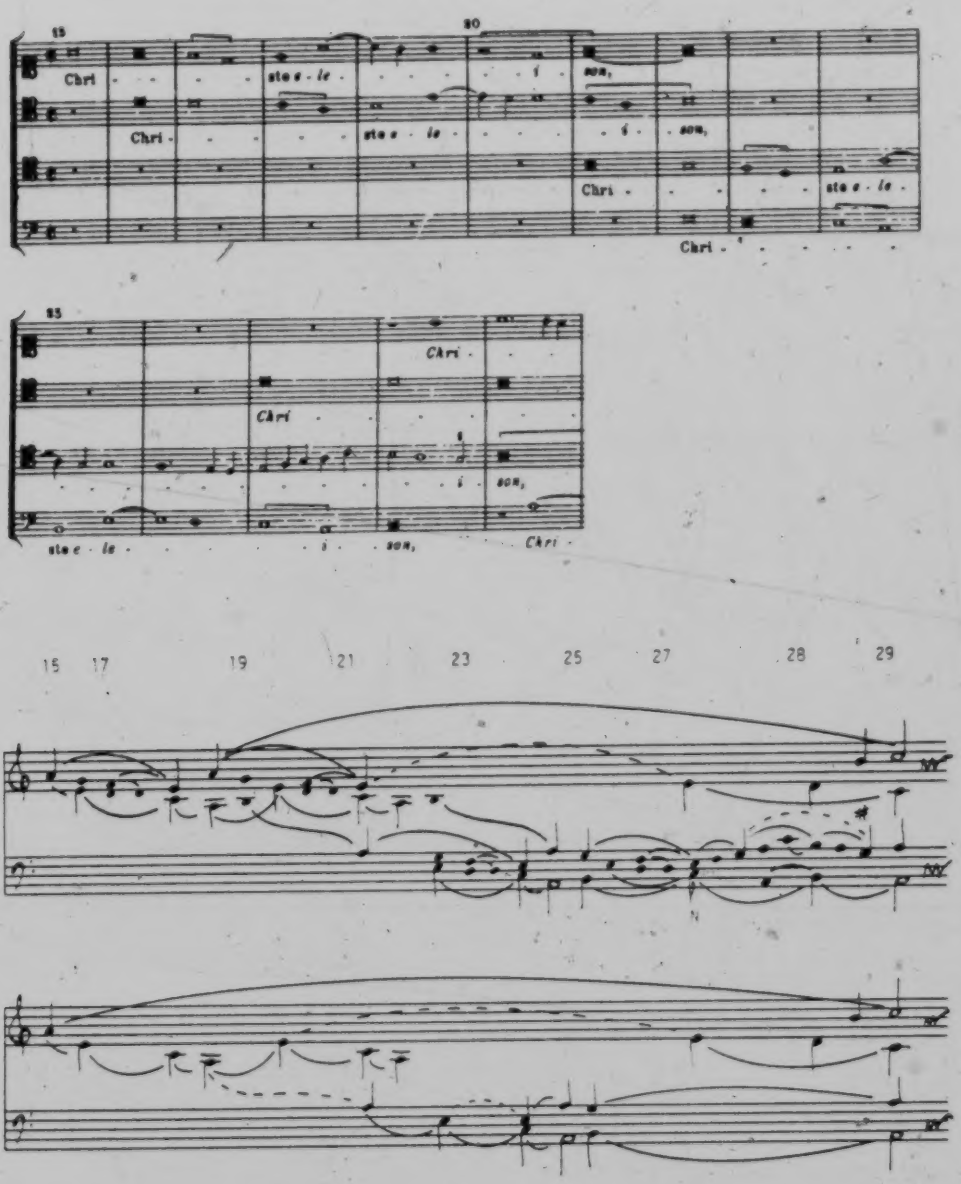
[112] Consideration of the complex prolongational nature of mm.6-11 is not relevant to the discussion in this chapter. The complete opening section of this movement is discussed in Chapter V, pp.89-94.

This fifteen-measure section--like the opening of the Sanctus from *Missa L'homme armé sexti toni*--is generated

Example 4-9. *Missa La sol fa re mi*, Kyrie mm.15-29 with reductions.



solely from the cantus firmus motive. The reductions show a registrally-consistent downward arpeggiation of the A-minor triad through all four voices.[113] Only when this arpeggiation is complete does the superius ascend to $\hat{3}$, and all four voices are heard together for only the second time since the very brief occurrence in m.22. The attainment of $\hat{3}$ is a significant event signalling the end of the arpeggiation and the beginning of the harmonically unstable four-voice passage that continues to the end of the Christe section.

Clearly, there is some triadic arpeggiation in the selected sacred works, especially at the beginnings of movements or sections. Josquin often appears to use arpeggiation as a means of establishing an upper-voice *Kopfton* for a fundamental line in many introductory passages, and this *Kopfton* may be $\hat{1}$, $\hat{3}$ or $\hat{5}$. Furthermore, one may deduce from the prolongational nature of some of the section openings that arpeggiation techniques--imitative, non-imitative, harmonically static or active--are frequently used to establish a central chord for a movement or section. That is to say, Josquin often appears to establish a "tonic" to which subsequent musical events are related.

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[113] The opening of this Christe also provides a resolution of the E triad closing the first Kyrie. The passage in relation to that closing sonority is discussed in Chapter VI, pp.119-124.

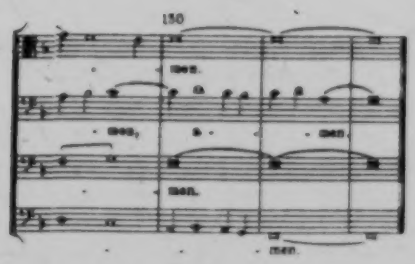
These lucid triadic arpeggiations suggest that the composer did not consider the triad to be merely the fortuitous confluence of individual melodies, but an entity expressable in both horizontal and vertical dimensions. If the triad is considered one of the fundamental components of tonal harmony, then Josquin's apparent awareness of the triad as a manipulable object may well be an important step in the evolution of the tonal system.

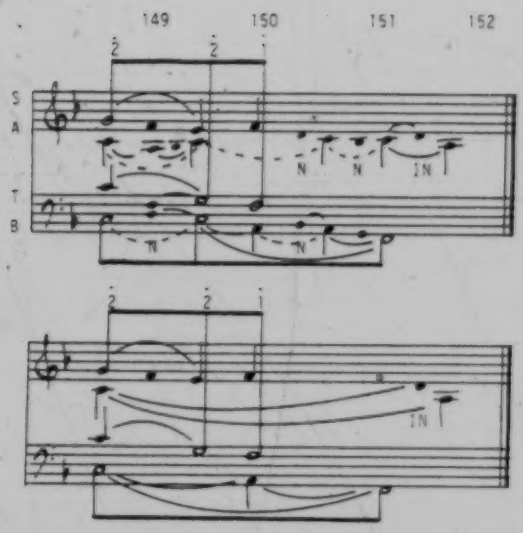
CHAPTER V: PROLONGATION: FOREGROUND AND MIDDLEGROUND

The methods of foreground and middleground triadic arpeggiation discussed in the preceding chapter are essentially simple forms of prolongation. The arpeggiation of a triad in one or several voices may occur over a harmonically static passage (foreground arpeggiation), or may be embellished by secondary chords supporting non-essential passing or neighbouring tones (deeper levels). Also, the arpeggiation of a triad may effect a melodic, as well as a harmonic, prolongation. However, other prolongational techniques are evident at different levels in the selected masses. The simplest technique is the preservation of musical motion by elided or avoided cadences, and includes both the "deceptive" cadence and overlapping--the entry of one or more voices before the cadence in the remaining voices. These events are not a concern in this study, because, although such cadences do "prolong" the music in a literal sense, they are not necessarily prolongational in the Schenkerian sense. An elided or avoided cadence may result from a prolongational process (e.g. prolongation of a defining chord with an upper neighbour), but the cadence itself does not prolong a triad. Emphasis will be on harmonic prolongation--triads prolonged by various means at different levels.

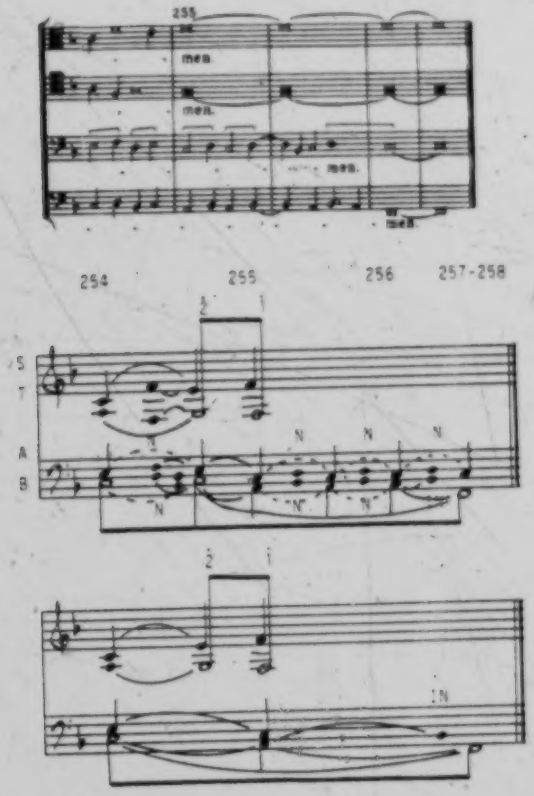
One common foreground event is the prolongation of a cadential sonority after all voices reach a strongly delineated close. A sonority may be prolonged in several ways. Example 5-1 illustrates two occurrences of the apparent falling-third cadence. Both exhibit the same

Example 5-1a. *Missa L'homme armé sexti toni*, Gloria mm.149-152 with reductions.





Example 5-1b. *Missa L'homme armé sexti toni*, Credo mm.254-258 with reductions.



essential structure: the goal of the bass c^3 is f^3. The cadential sixth between the tenor and superius occurs above the bass c^3, but when the sixth resolves to an octave, the bass falls a third to a^3 before finally descending to f^3. The bassus in Example 5-1a has a simple a^3-$b\flat^3$-a^3 neighbour figure before the descent to f^3 through g^3. Example 5-1b is similar, but the neighbour-note motive is repeated several times before the descent occurs. In both passages, the altus runs in parallel thirds (expressed as parallel tenths in the first) with the bassus until the

descent to f^2. However, in Example 5-1a an unresolved incomplete neighbour (IN) d^4 in the altus falls a fourth to a^3, the third of the triad;[114] nor is it resolved at the beginning of the Credo which follows.

The altus gesture is a transposed retrograde statement of the piece's opening motive--the upward leap of a fourth followed by a downward step (see Example 5-1c).

Example 5-1c. Opening gesture of *Missa L'homme armé sexti toni* (beginning of the Kyrie, altus voice).

The upper note of the fourth is a correctly-resolving IN.[115] This motive is also the opening melodic gesture of the cantus firmus, and, in the Gloria of *Missa L'homme armé sexti toni*, is first heard in the altus. Josquin's choice of the altus as the voice that states the transposed retrograde motive in the movement's final cadence may not be a coincidence. Finally, in both examples the a^2-$b\flat^2$-a^2 bass neighbour motion represents a completion of the incomplete neighbour motion expressed in the f-b♭-a motive from the cantus firmus. Thus the deeper-level structure of

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[114] The third of the triad in the closing sonority is a violation of the first rule of counterpoint (see the discussion of Tinctoris's *Liber de Arte Contrapuncti* in Chapter III, pp.35-37.

[115] This opening gesture is discussed in more detail in Chapter IV, pp.44-46 (Example 4-3).

these two cadences is the fifth-descent from c^3-f^3 through the third divider a^3 which creates the prolongation by arpeggiation.

These Josquin masses have final sectional cadences in which one or more voices continue beyond the point of cadence, providing melodic embellishment and prolonging the closing sonority. However, a curious situation arises when the embellishing passage includes the third of the triad. A tabulation of cadence types and sonorities at the ends of movements and sections in the six masses appears as Appendix 1.[116] The term "full*" in this table refers to the tonicized sonorities of the cadences, and suggests that the listener perceives a full triad even though at the point of either cadence or final repose the voices express an $\frac{8}{5}$ sonority.[117] Although in these cadences the bassus may be one of the prolonging voices, the resolution is not delayed as in the falling-third cadences, and the prolongation is therefore truly post-cadential.

One example of an embellished cadence with a full* sonority occurs at the end of the *Credo De tous biens* (see

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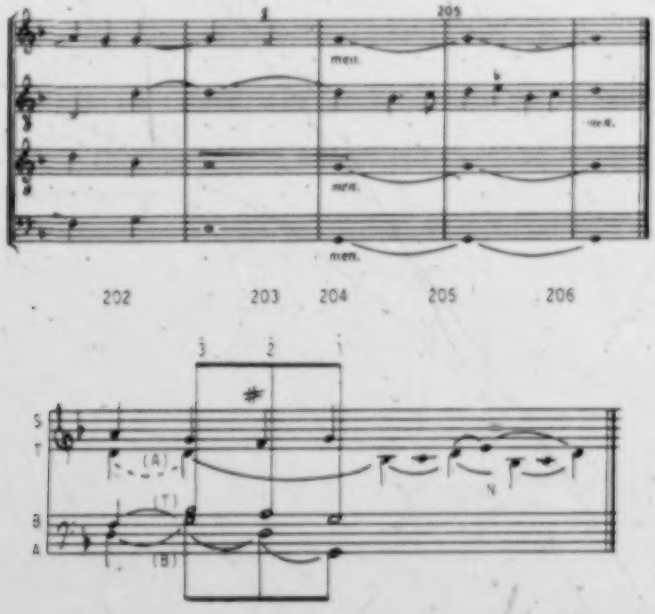
[116] See pp.185-188.

[117] Clarification may be required here. In these embellished cadences, the point of cadence is not the point of final repose. The former (cadence) is the resolution from the defining sonority to the tonicized sonority--either a $\frac{5}{3}$ (triad) or $\frac{8}{5}$--and occurs *before* the embellishment. The latter (final repose) is the sonority actually sounding as the final vertical simultaneity *after* the embellishing passage.

Example 5-2). In this straightforward case, all four voices cadence on a G-minor triad in m.204.

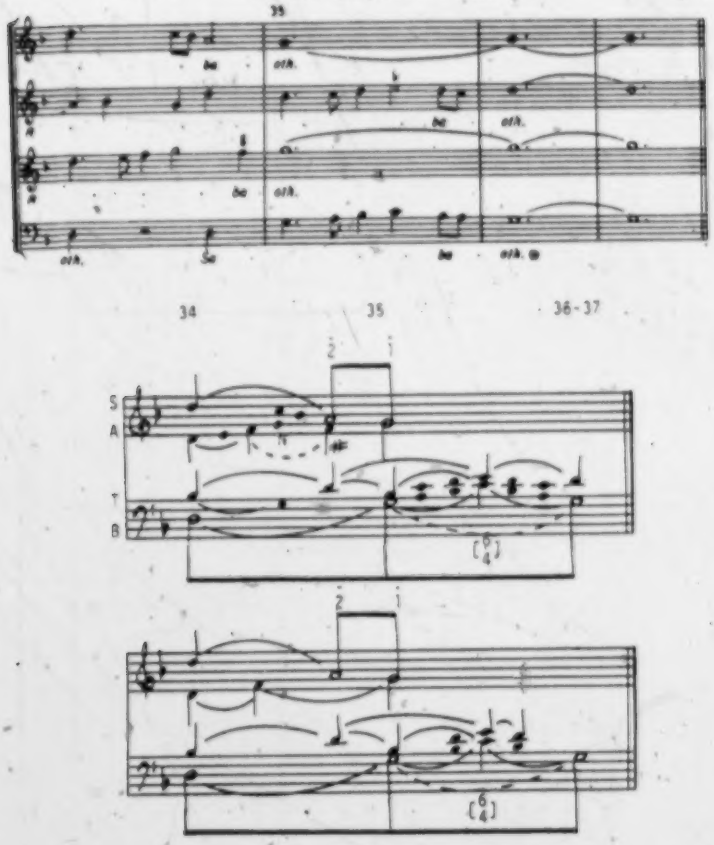
Example 5-2. *Credo De tous biens*, mm.202-206 with reductions.



The altus continues with an embellishment, leaping from d^4 to $b\flat^3$, then climbing back up to the neighbouring $e(\flat)^4$ before eventually coming to rest again on the d^4. With the exception of the beginning and ending d, the $b\flat$ is the longest note in the passage, and it therefore remains in the listener's ear after it actually ceases to sound. This assertion rests on the assumption that at these points of harmonic stasis (sustention of the tonicized sonority), the ear remembers the third of the triad because of its harmonic context, and therefore still hears that third in the final $\frac{8}{5}$ sonority.

Prolongation of a cadential sonority is effected by two-voice embellishments as well. The cadence in Example 5-3 is defined by the third-unison close between the tenor

Example 5-3. *Missa Ad fugam,* Sanctus mm.34-37 with reductions.

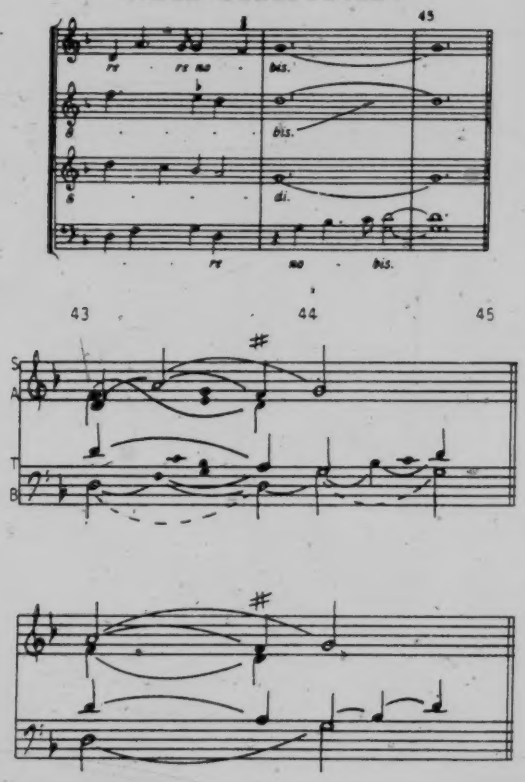


and superius supported by the d^3-g^3 leap in the bass. This time, however, two voices--the bassus and altus--provide the embellishment after the cadence. The sonority at the moment of closure in m.35 is a full triad, G-B♭-D. The bassus climbs from g^3 to c^4 through $b\flat^3$ before falling back to g^3; the altus is in parallel thirds with the bassus

(from b♭³-e(♭)⁴), but instead of returning to b♭³, it remains on d⁴. Thus the final sonority is an open $\frac{8}{5}$, but the b♭³ sounded by the altus at the cadence and stated by the bassus in the embellishment remains in the listener's ear as part of a full triad.

Finally, there is at least one cadence embellished by the bassus alone (see Example 5-4). Once again, all voices

Example 5-4. *Missa Ad fugam*, Agnus Dei mm.43-45 with reductions.



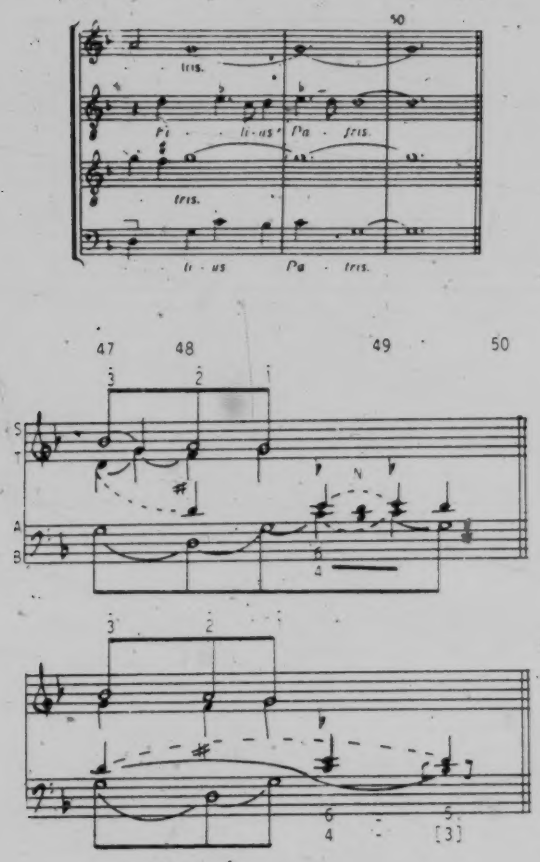
cadence on an open G sonority ($\frac{8}{5}$). The bassus leaps from g³ to b♭⁴ before the *divisi* g³-d⁴ at the end. Because of the melodic accentuation created by the leap, and because

of the rhythmic distinction of the b♭ (indicated in the transcription as a dotted quarter note), the listener is again left with the impression of a final full triad rather than an open sonority.

Embellished final cadences using full* sonorities in these Josquin masses clearly involve more than simple melodic embellishment; they seem to indicate an awareness of the triad as a musical entity capable of compromising the rules of counterpoint, because they supply a technique for ending a movement or section properly according to rules of counterpoint (i.e., with a perfect consonance) while leaving the listener with the sense of a full triad (i.e., an imperfect consonance). Consequently, these cadences also effect prolongations of triads.

Cadential embellishment may also create $\frac{6}{4}$ prolongations, usually of the tonicized sonority. In this case, the situation is similar to that involving full* sonorities, but there are usually two voices extending the music by means of the $\frac{6}{4}$ neighbouring sonority. Example 5-5 illustrates one such case. The tenor and superius close with a third-unison dyadic progression supported by a d^3-g^3 leap in the bass (m.48), while the altus enters on d^4 just before the moment of cadence on the G $\frac{8}{5}$ sonority. The prolongation by the notes c^4 and $e(\flat)^4$ in the bassus and altus respectively may be heard as a $\frac{6}{4}$ prolongation of the G sonority even though the bassus temporarily abandons g^3.

Example 5-5. *Missa Ad fugam*, Gloria mm.48-50 with reductions.

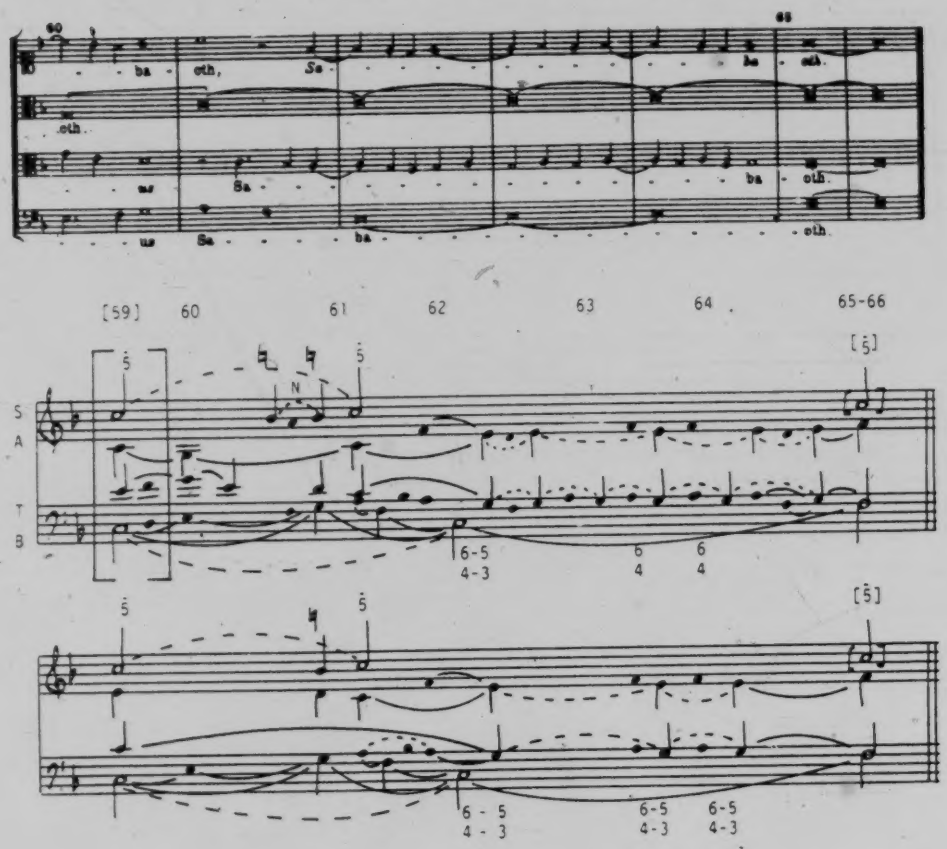


This interpretation is correct because of the third-unison cadence in the tenor/superius pair. These are the structural voices in the canon mass, and therefore necessarily were composed first. Their cadence in m.48 signals the structural close of the section, and the bassus/altus embellishment which follows must therefore be considered a $\frac{6}{4}$ prolongation of the tonicized G sonority. Once again, the bassus touches on the third of the closing triad (b♭³); however, the b♭ in this case is a lower

neighbour to the prolongational c^4, so its role as the third of a triad in a full* sonority is weakened.

Prolongation occurs in the defining sonority at cadences as well. In Example 5-6, the defining C-major

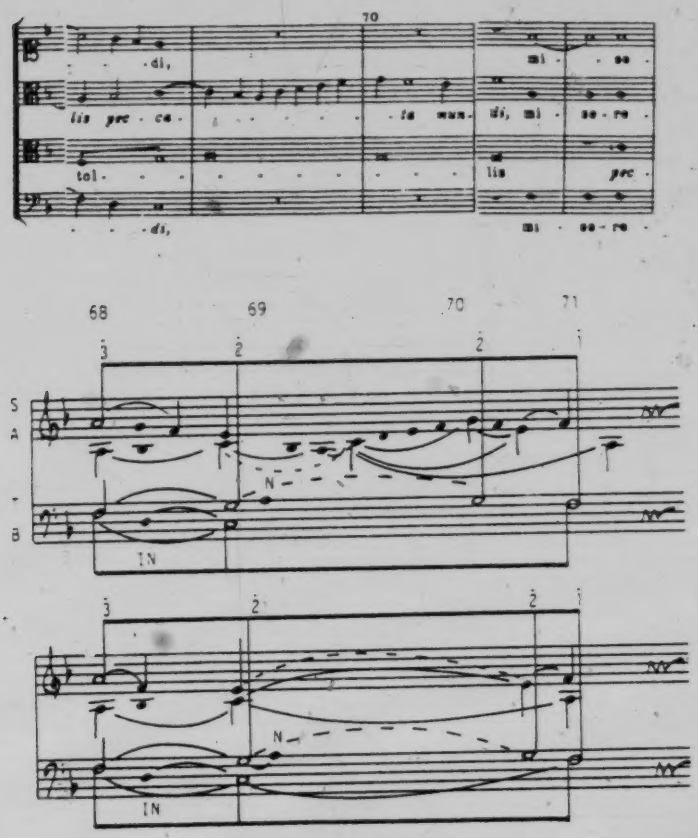
Example 5-6. *Missa Fortuna desperata,* Sanctus mm.60-66 with reductions.



triad is established in m.62. The suspended a^3 in the tenor and f^4 in the superius resolve to the g^3 and e^4 respectively, and the next three measures simply prolong the C triad by a $\frac{6}{4}$ neighbouring motion.

Another type of prolongation appears in the penultimate sonority, and although it occurs only rarely, Example 5-7 illustrates one case. When the four voices

Example 5-7. *Missa Fortuna desperata*, Gloria mm.68-72 with reductions.

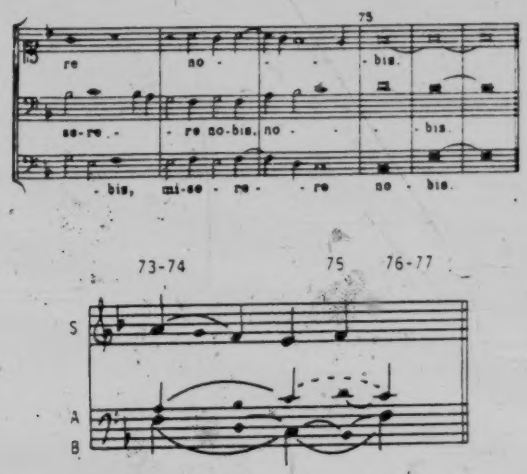


reach the C-major defining chord in m.68, the expected resolution to the central F triad is interrupted as the tenor and altus continue in a short duet through mm.69-71. This duet prolongs the C-major triad, which is resolved in all four voices in m.71. The superius e^4 is picked up by the altus in m.70 and resolved to f^4, but when the superius

re-enters on f^4 in m.71, the altus returns to its original register on a^3. The tenor cantus firmus phrase that begins in m.67 is the integral event giving rise to the prolongation. The a^3 in the tenor (m.69) is a neighbour to the g^3 (mm.68 and 70), which is part of the C-major sonority. The remaining voices resolve only when the tenor cantus firmus phrase ends in m.71.

Missa L'homme armé sexti toni has a prolongational cadential figure arising out of a foreground motivic event (see Example 5-8). It involves the apparent interruption

Example 5-8. *Missa L'homme armé sexti toni*, Agnus Dei mm.72-77 with reductions.



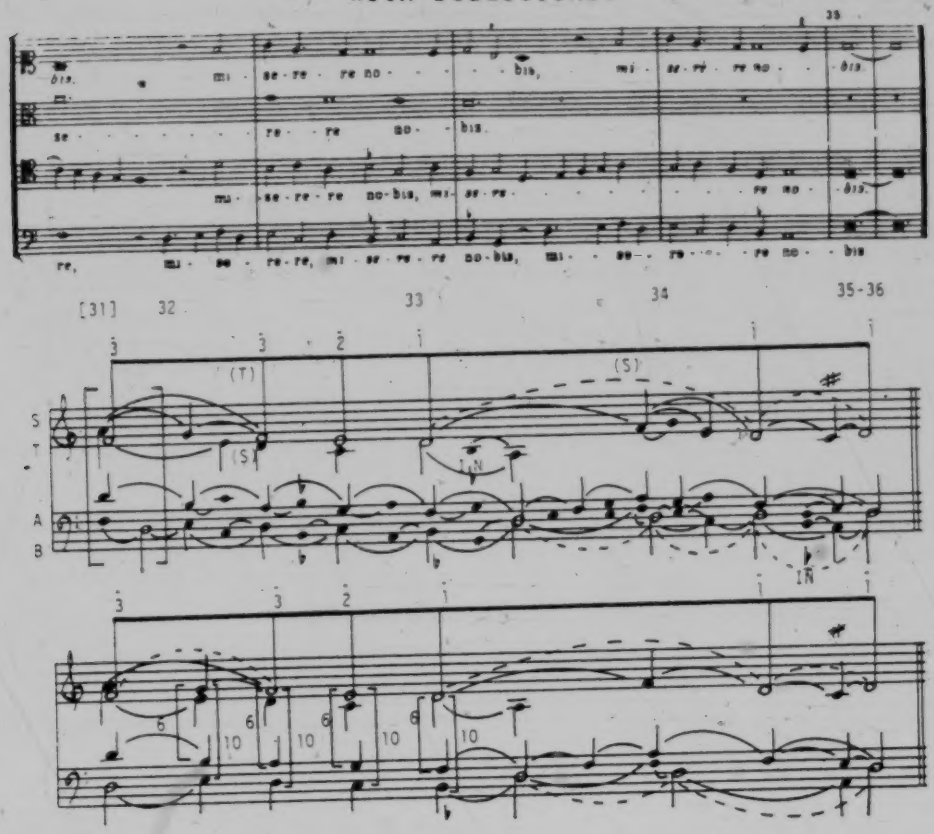
of a C-major-F-major cadential progression by a B♭-major triad. Although this cadence might be labelled *plagal*, such a designation is surely misleading. The essence of the voice leading is a B5 cadential progression, with the bassus leaping up from c^3 to f^3. The $b\flat^3$ in the bass

simply provides consonant support for the neighbouring d^4 in the altus voice. This interpretation is justifiable on two counts. First, because there is no cantus firmus voice in this three-voice section of the work, the upper voice with its leading-tone cadence (e^4 to f^4) defines the moment of closure. Second, the c-d-c neighbour motive is an essential gesture for several movements of *Missa L'homme armé sexti toni*, including this one. The motive is reiterated by the altus for the last time in this section (mm.74-76), and the bassus simply provides consonant support for the neighbouring d^4.[11a]

In contrast to the harmonically-static embellished cadences discussed above, codettas occur in these Josquin masses as extended passages prolonging the central sonority of a section or movement after the final cadence. Also, embellished cadences are usually short, with, at most, two voices prolonging the tonicized sonority by emphasizing the third of the triad. Codettas, on the other hand, are longer, usually involve three or more voices, and are often harmonically complex. Example 5-9a shows a section of the Agnus Dei from *Missa L'homme armé super voces musicales*. In this passage, the superius, altus and bassus do not end with the cadence provided by the tenor cantus melody in m.33. The superius/tenor voice-crossing in mm.31-32

[11a] For a detailed discussion of this motive, see Chapter VI, pp.145-146.

Example 5-9a. *Missa L'homme armé super voces musicales*, Agnus Dei mm.32-36 with reductions.



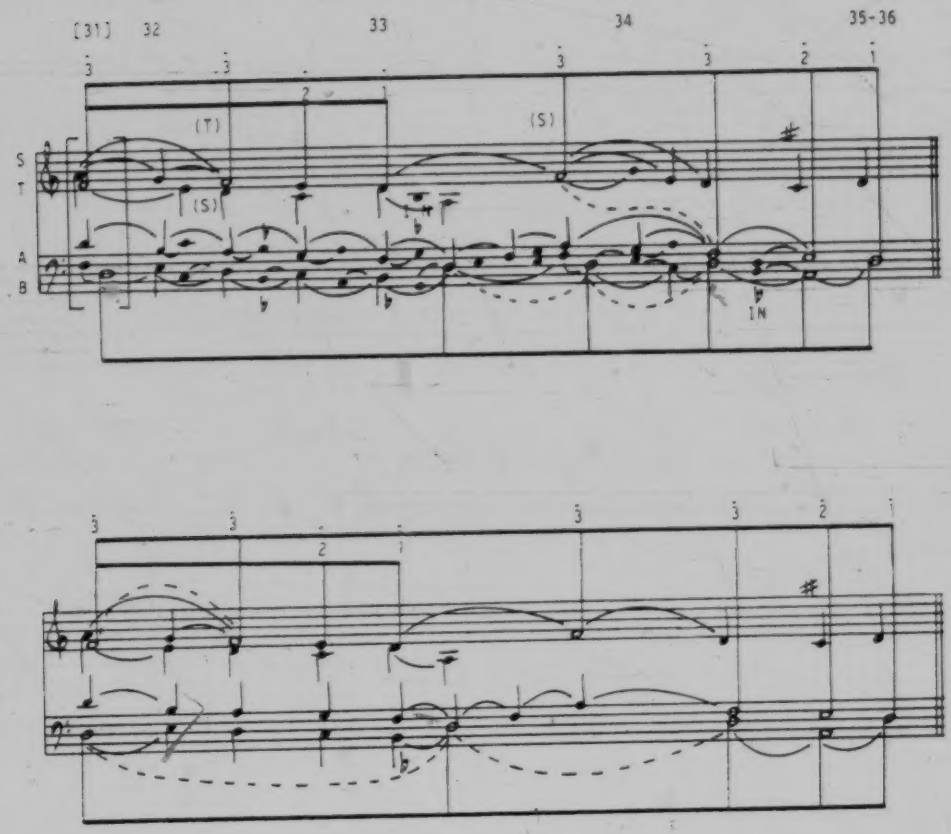
creates an upper-voice $\hat{3}$-$\hat{2}$-$\hat{1}$ descent. The bassus and altus in mm.32 and 33 are engaged in a sequential dyadic progression of fifths and octaves, which propels the voices beyond the tenor cadence. The sequence is generated by a chain of parallel sixths between tenor and altus and parallel tenths between tenor and bassus. The counterpoint creates deeper-level parallel fifths between altus and bassus and parallel octaves between bassus and superius, but the parallelisms are acceptable because all

three voices are consonant with the tenor. This consonant relationship strongly implies that the tenor is the structural voice for the section, and therefore provides the final cadence in m.33. The tenor ends with the $\hat{3}$-$\hat{2}$-$\hat{1}$ descent in mm.32-33, but the bassus, altus and superius continue in a codetta that reinforces D minor as the central sonority for the section.

An alternate reading is possible if the tenor is not considered the voice that dictates the tonal sense of the passage. In this view, the deceptive resolution created by the continued sequence in the bassus/altus pair avoids the cadence implicit in the $\hat{3}$-$\hat{2}$-$\hat{1}$ tenor descent. The superius, altus and bassus then confirm D minor with a final $\hat{3}$-$\hat{2}$-$\hat{1}$ descent supported by a B5 cadence in mm.34-35. Example 5-9b provides this alternate reading, which seems to make more tonal sense than the first reading. It also provides a defining chord--conspicuously absent from the first reading--for the section's central triad, D minor. Furthermore, the tenor's $\hat{3}$-$\hat{2}$-$\hat{1}$ descent is a surface-level event nested within a prolonged D-minor triad, and the true final descent occurs afterward in an inner voice.

Passages such as this clearly indicate the dichotomy evident in much of Josquin's music. The apparent structural role of the tenor cantus firmus in this section seems to require the cadence and codetta indicated in Example 5-9a, but the obfuscation of the tenor's close in

Example 5-9b. Alternate reading of the passage in Example 5-9a.

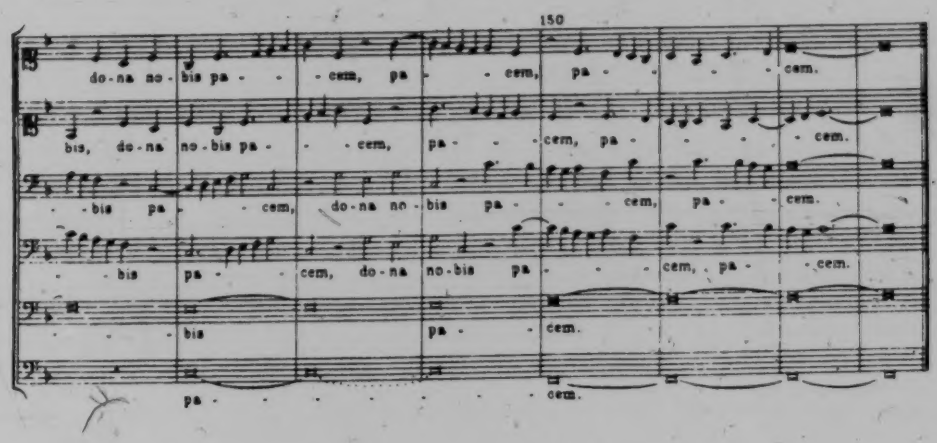


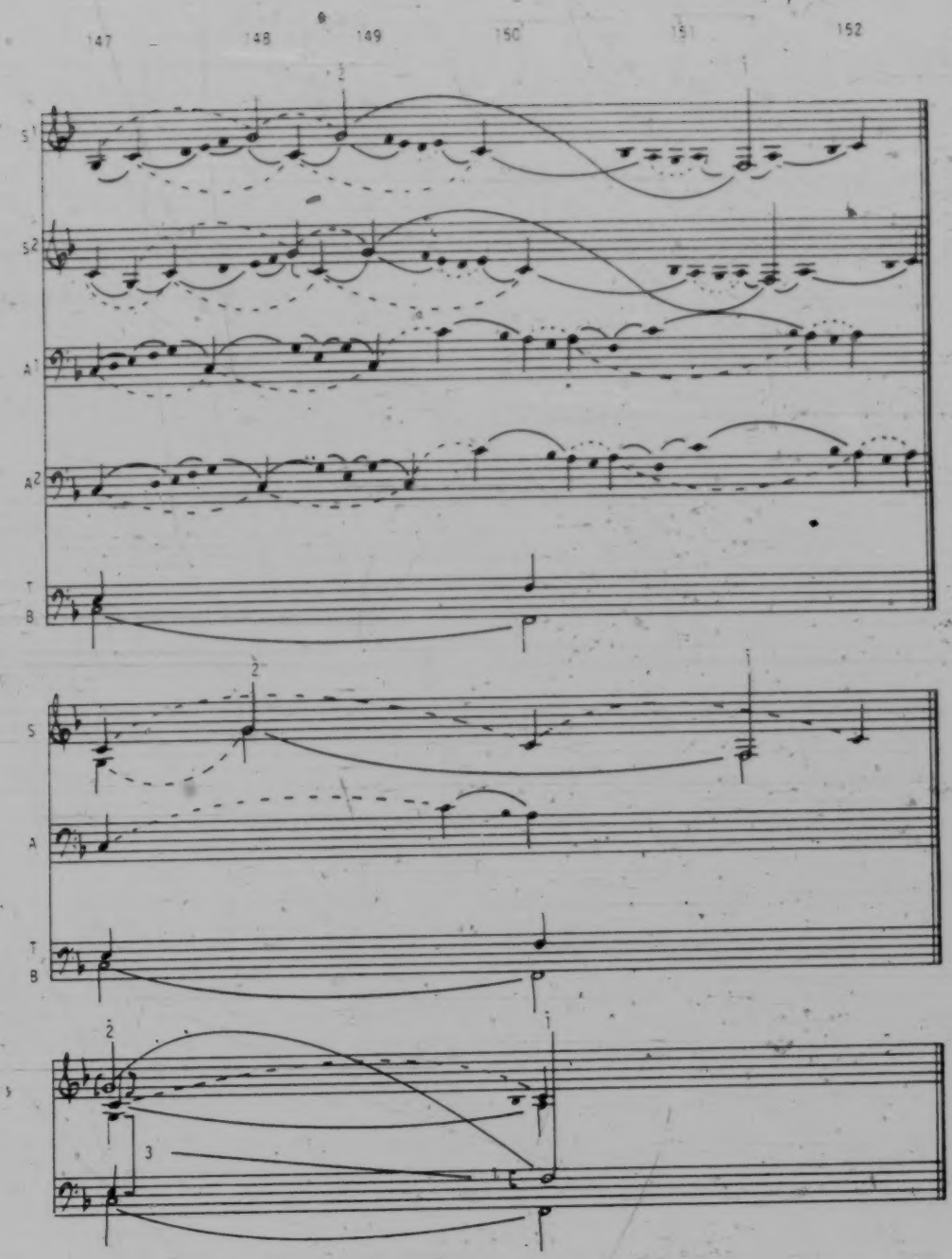
m.33 seems to support the reading in Example 5-9b. Nonetheless, the first reading, because of the consonant intervallic progression in mm.32-33, is truer to the pure voice-leading in the passage, and to the structural role of the tenor cantus firmus. Example 5-9a therefore provides the correct interpretation of the passage.

A more lucid example of a codetta occurs at the end of *Missa L'homme armé sexti toni*, in the six-voice Agnus Dei (see Example 5-10). The musical structure of this section is complex: the cantus firmus is shared by tenor and bassus. The tenor cantus is taken from the second phrase of the *L'homme armé* melody; it is stated once normally, then in exact retrograde. The bassus presents the opening phrase of the cantus melody first in exact retrograde, then in normal order. Above this cantus construction are two superius voices in canon and two altus voices in canon.

As the reductions in Example 5-10 indicate, the final cadence occurs in mm.149-150. Measures 150-151 are a codetta that prolongs the central F-major sonority and

Example 5-10. *Missa L'homme armé sexti toni*, Agnus Dei mm.147-153 with reductions.




147
148
149
150
151
152
S1
S2
A1
A2
T
B
S
A
T
B

allows the upper voices to finish their canons. In contrast to Example 5-9, the structural cadence in Example 5-10 is clearly delineated, and the prolongation is effected by the passing and neighbouring figures in the two canons. The most significant event in the codetta is the full triad sounding at the end of the work, for it violates the first rule of counterpoint, that a piece must end (as well as begin) on a perfect consonance.[11*] This passage is not a simple one- or two-voice embellishment of an $\frac{6}{5}$ sonority; it is a four-voice prolongation of a full triad, and is preceded by a strongly-stated B5 cadence.

The passages discussed above are examples of surface-level prolongational events. Prolongation in the masses also occurs at deeper levels. Many such prolongations take place at the opening of a movement, or of a section within a movement. Example 5-11 reproduces the opening measures of the Credo from *Missa Fortuna desperata*. The superius in this excerpt apparently establishes $\hat{3}$ as a *Kopfton*. The essence of the passage is a prolongation of an F-major triad by means of a series of B5 cadences. A strong internal cadence occurs in mm.20-21 as $\hat{2}$ resolves to $\hat{1}$ in the superius. The $\hat{2}$-$\hat{1}$ scale motion is repeated from mm.27-28, and the tenor assumes the $\hat{2}$ in m.32 for the cadence in m.33. The music's dependence on text in the

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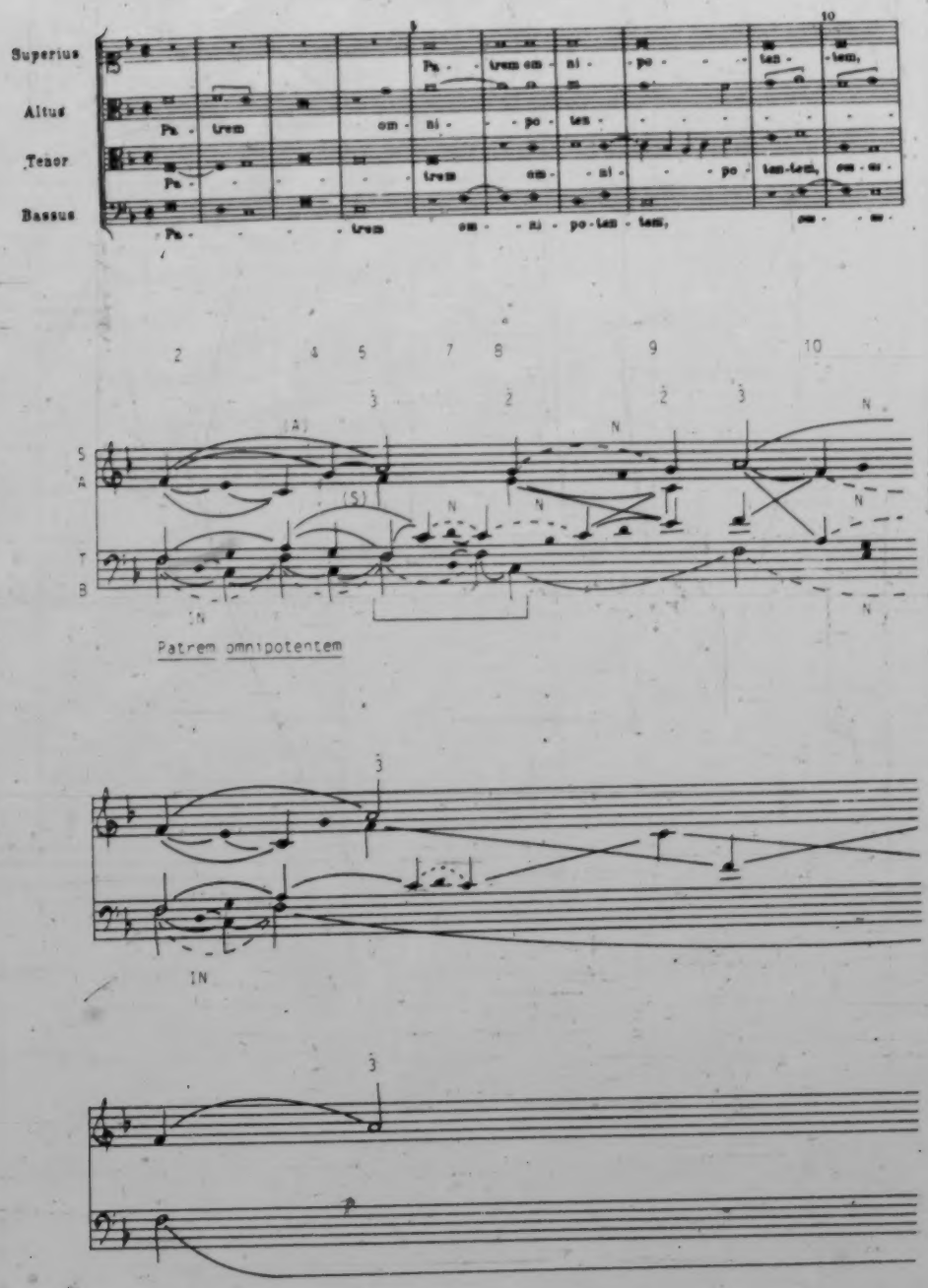
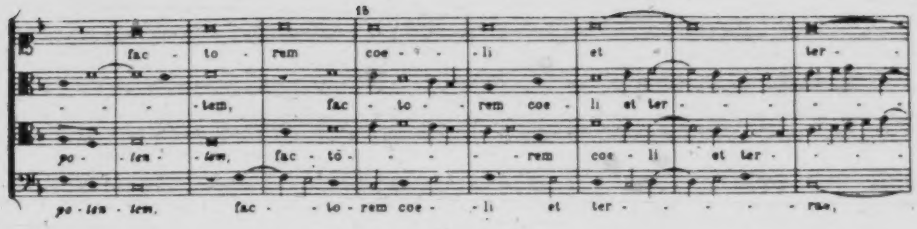
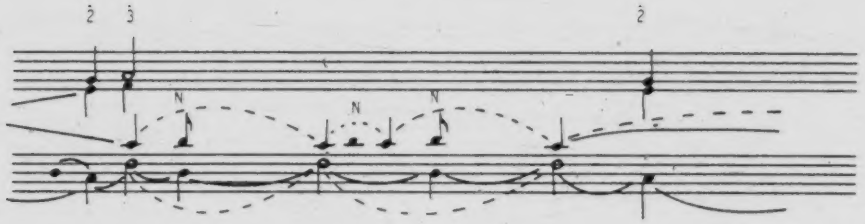
[11*] Again, the reader is referred to Tinctoris, *Liber de Arte Contrapuncti*, pp.132-140, for a review of Tinctoris's eight general rules of counterpoint.

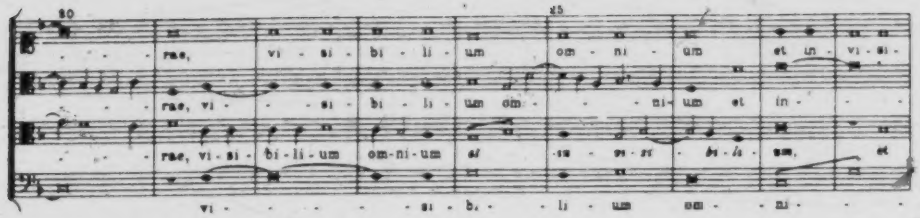
Example 5-11. *Missa Fortuna desperata*, Credo mm.1-34, with reductions.



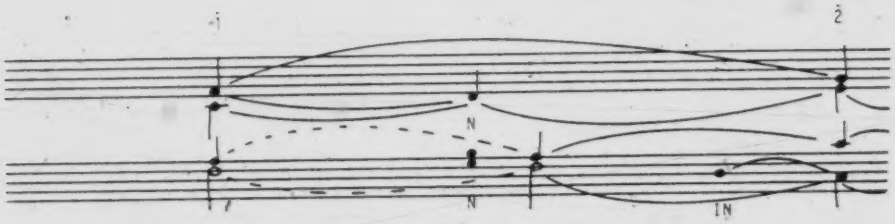


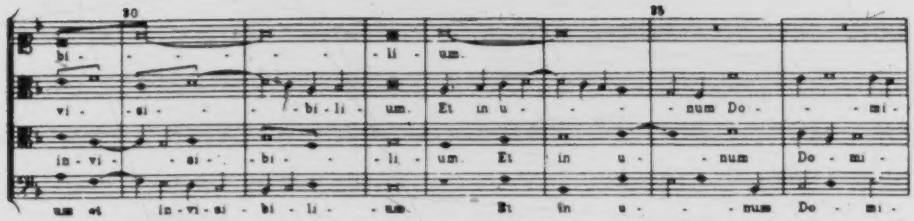
factorem coeli et terrae

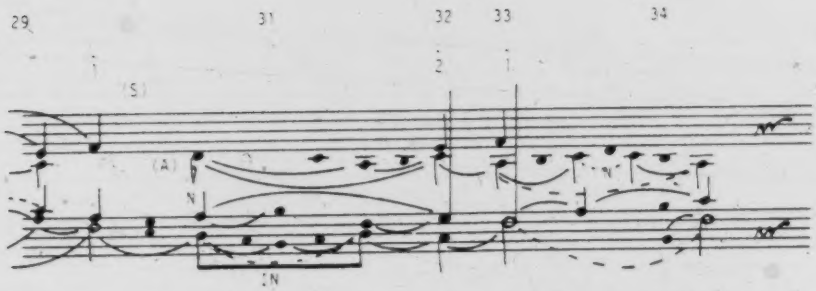




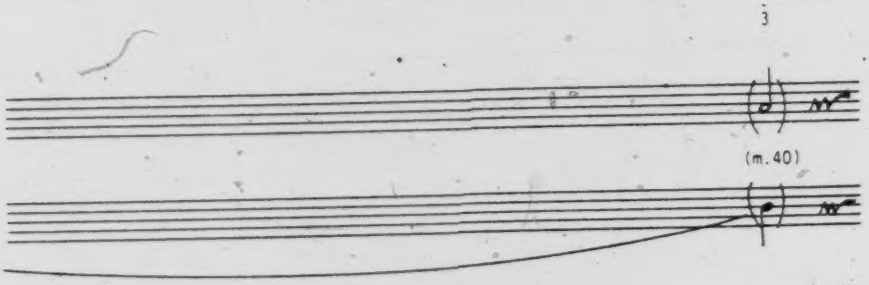
visibilium omnium et invisibilium







Et in unum Dominum



passage should be noted, because it is this dependence that creates the musical sectionalization. There are three subsections, the first on the words *Patrem omnipotentem* (mm.1-13), the second on the words *factorem coeli et terrae* (mm.13-21), and the third on the words *visibilium omnium et invisibilium* (mm.21-33). The three small subsections create a larger coherent unit--the opening sentence of the Credo, represented musically by the prolongation of the F-major sonority (mm.1-33). The fourth subsection, commencing on the words *Et in unum Dominum* in m.33, then begins the next large textual and musical unit. The tripartite structure of the first large unit is evident in the middleground graph in Example 5-11.

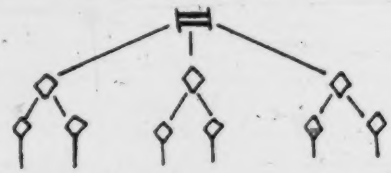
The second of the three sections has a composing-out of the bass motive found in mm.5-8 (indicated in the foreground graph by the square bracket underneath), and the composing-out is revealed in the foreground and middle-ground graphs. In mm.13-16 the bass d^3 is embellished by a neighbouring c^3, and there are passing e's between the f^3 and d^3. The prolongation is repeated (with a metric shift) in mm.16-18 before the bass leaps down a fourth from f^3 to c^3. The C-major triad built on this note is itself prolonged in mm.19-20 before the cadence on F major ends the subsection in m.21.

A second example of deeper-level prolongations occurs

in the opening of the Sanctus from *Missa La sol fa re mi* (see Example 5-12). The opening A (minor) sonority is prolonged by a series of parallel tenths between bassus and superius (mm.1-4), and is followed by a prolonged E triad (mm.5-10). The prolongation of the E triad is a complex event. The bass line, when considered by itself, seems to emphasize the note f^3 as an upper neighbour to e^3. This is because of the f^3's fourth-relationship with the c^3 below it, and because of its rhythmic prominence as the longest note in each measure.[120] However, such an interpretation is not borne out by the harmonic structure of the passage; d^3 is the root of the D-minor triad that is a lower neighbour to the E triad. The f^3, therefore, prolongs the lower neighbour d^3.

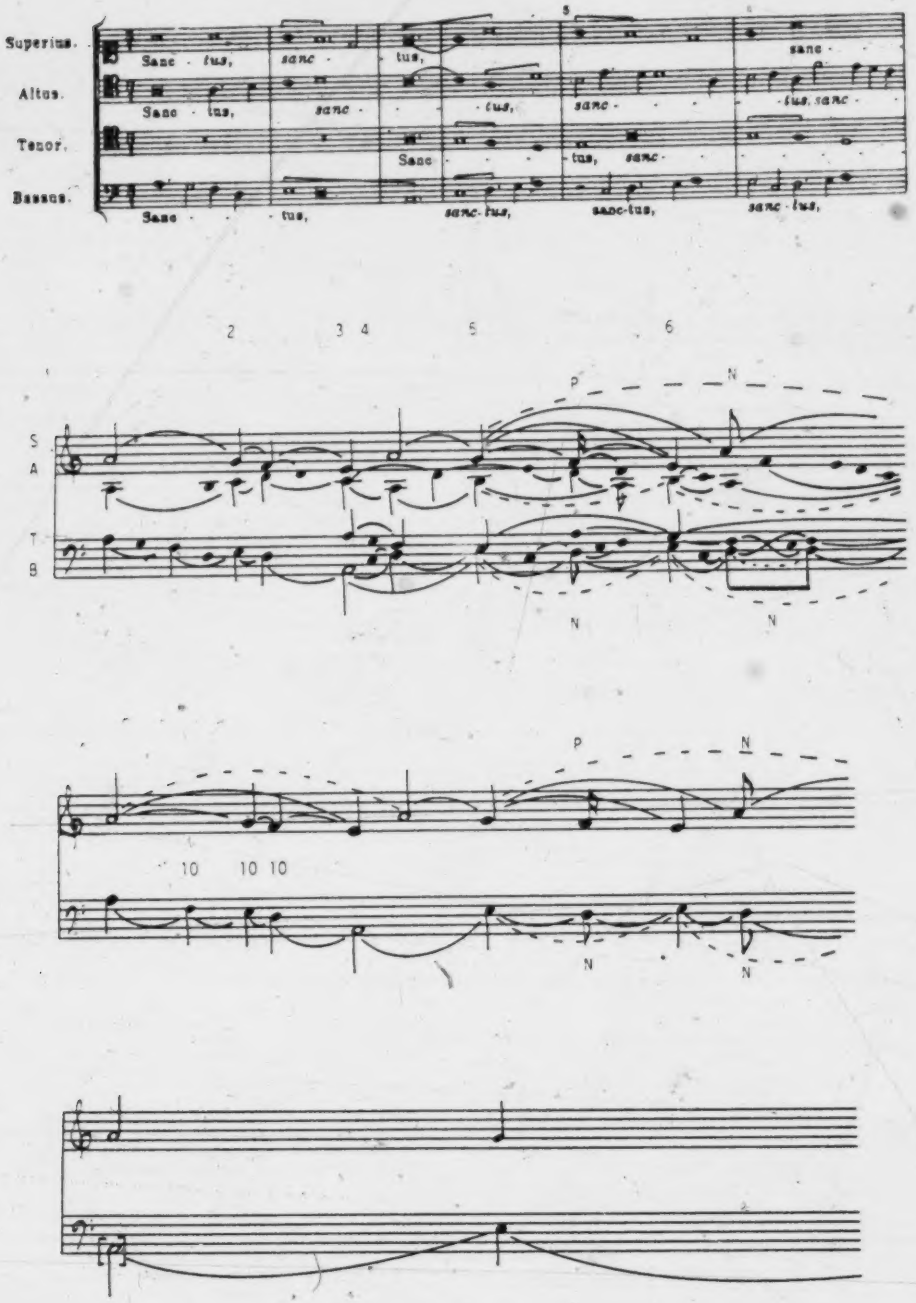
---

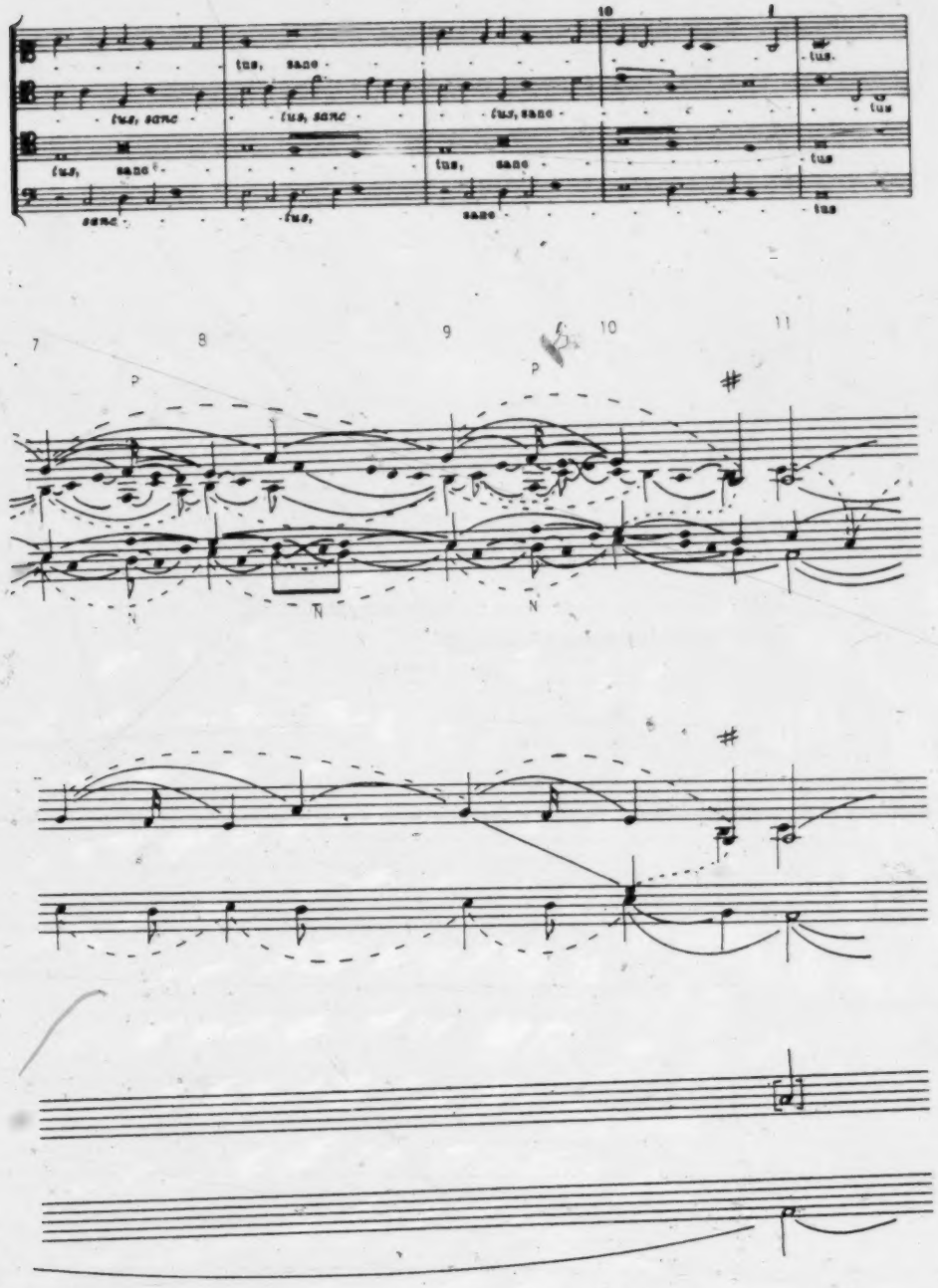
[120] The measures are, of course, a modern convenience. According to the transcription, the mensuration in the passage should be *tempus perfectum cum prolatione imperfectum*, which is division of the *breve* into three *semibreves*, and the further division of each *semibreve* into two *minimae*:

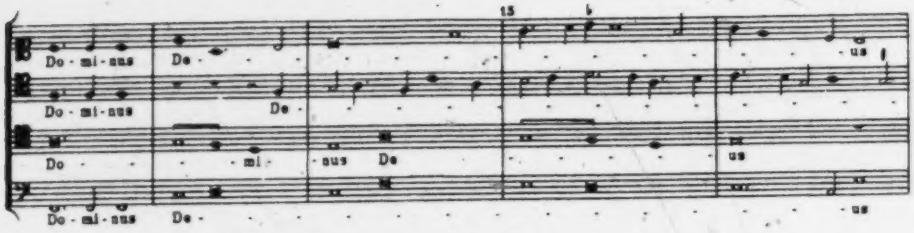


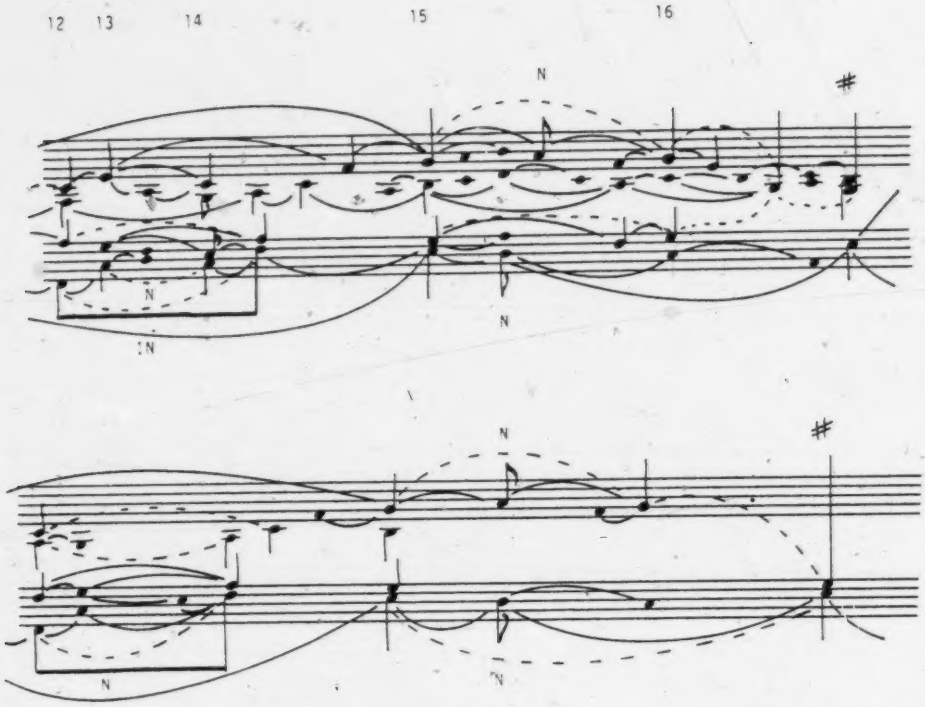
(See Willi Apel, *The Harvard Dictionary of Music*, second edition [Cambridge, Mass.: Belknap Press of the Harvard University Press, 1972], pp.520-522 for a brief summary of mensural notation.) Thus, each measure of the transcription represents the value of a *breve*, and each whole note the value of a *semibreve*. In mensural notation, therefore, the f^3 would be expressed as a *semibreve*, the longest bass note value in this excerpt (mm.5-9 in modern notation).

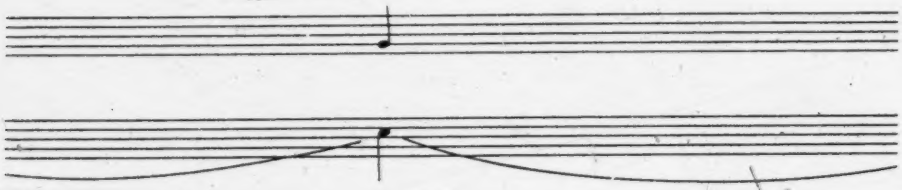
Example 5-12. *Missa La sol fa re mi*, Sanctus mm.1-19 with reductions.

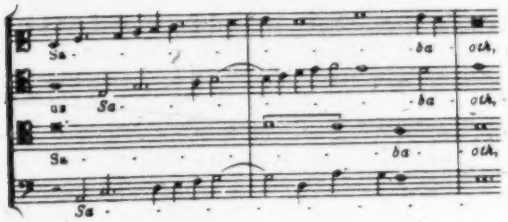

Superius.
Altus.
Tenor.
Bassus.
Sanc - tus, sanc - tus, sanc - tus,


tus, sanc
tus, sanc
tus, sanc
tus, sanc
tus, sanc
tus, sanc
tus, sanc
tus
sanc
tus,
sanc
tus
7
8
9
10
11
P
P
N
N
N

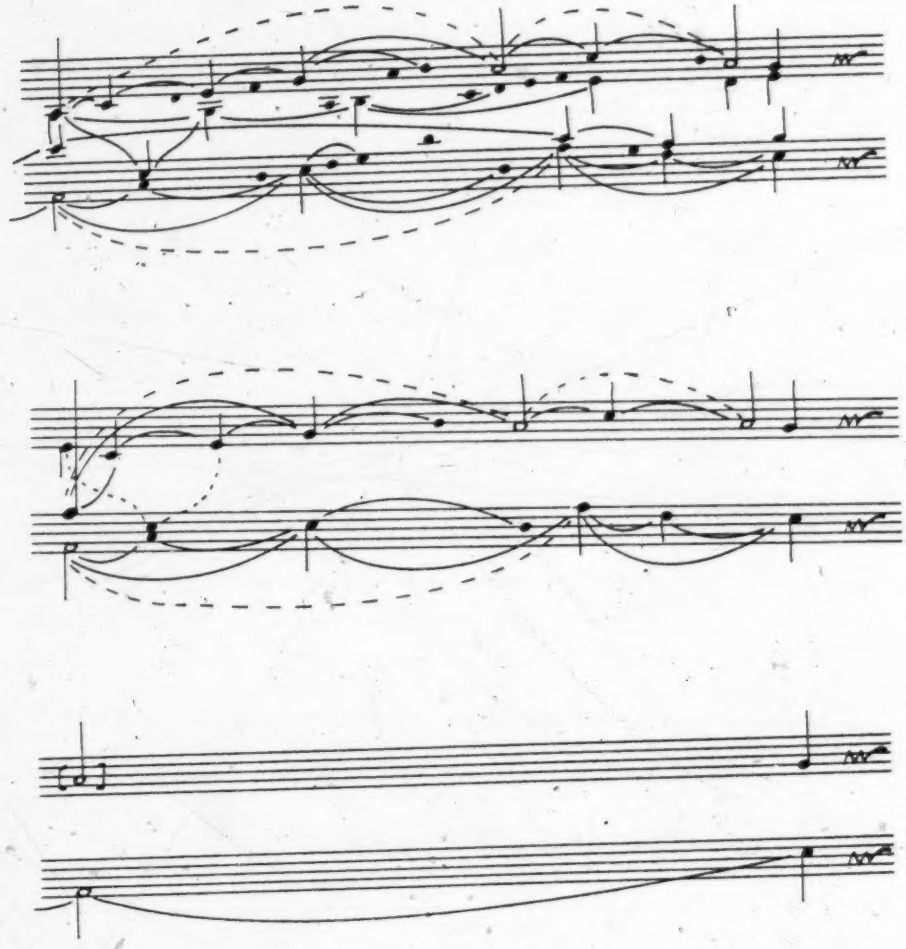

Do - mi - nus
De -
us
Do - mi - nus
De -
Do
- mi -
nus
De
us
Do - mi - nus
De -
us


12
13
14
15
16
N
#
N
N
N
N
#
N
N





17 18 19

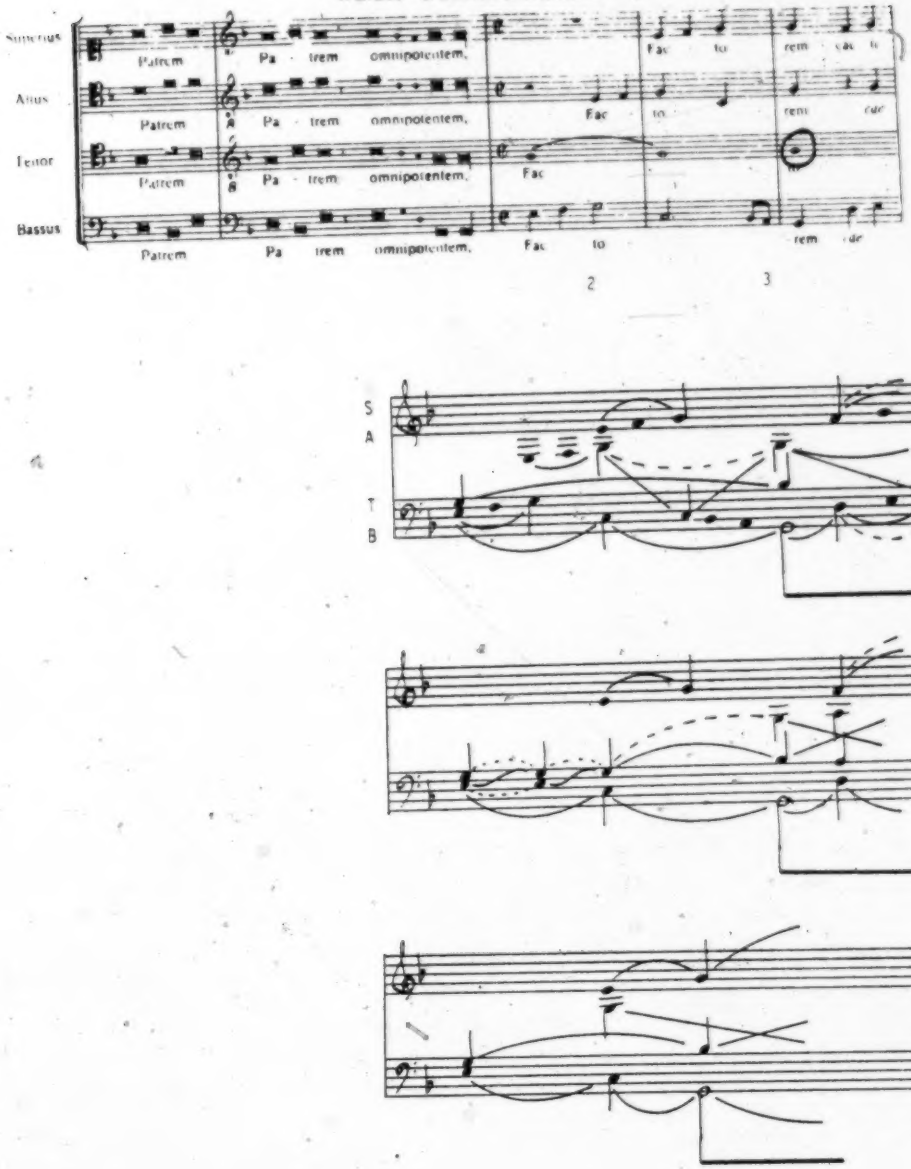


The E triad finally cadences on A minor in m.11, and there is a sudden harmonic shift to an F-major triad in m.12. Here the bass f^2 is the root of an F triad that is an upper neighbour to the E triad. The f^2 in m.12 is prolonged by the c^3-d^3-c^3 neighbour in mm.13-14, and is transferred up an octave to f^3 in m.14 before resolving to e^3 in m.15. The e^3 and its neighbours, f^3 and d^3, which formed the chain of parallel tenths with the superius in mm.1-4, are now the essential elements of the middleground prolongations in mm.5-10 and mm.12-15.

The complexity of Josquin's harmonic structures is evident in the prolongation in mm.15-19. While the E triad in m.15 prolongs the A triad from m.11 by an approach through the F triad a third below A (mm.12-15), the E triad is itself prolonged by the C triad in m.16 in the same lower-third relationship. After the return to E in m.16, there is a cadence on A in m.17. The A triad is again prolonged by a leap of a third--this time upward to c^3, the third-divider between a^2 and e^3. The e^3 is attained briefly in m.17, and is followed by a continued ascent to g^3--the note a third above e^3. The bassus then completes its ascent to a^4 in m.18, and is followed by a fourth-descent to e^3 in m.19.

Middleground prolongation is less complex in the opening measures of the *Credo De tous biens* (see Example 5-13). The structural G-minor triad (m.13) is established

Example 5-13. *Credo De tous biens*, mm.1-31 with reductions.[121]



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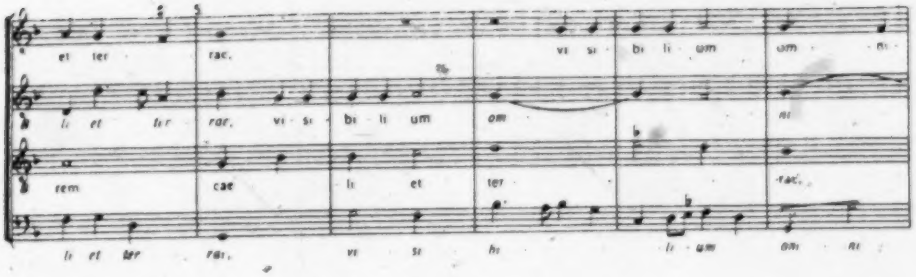
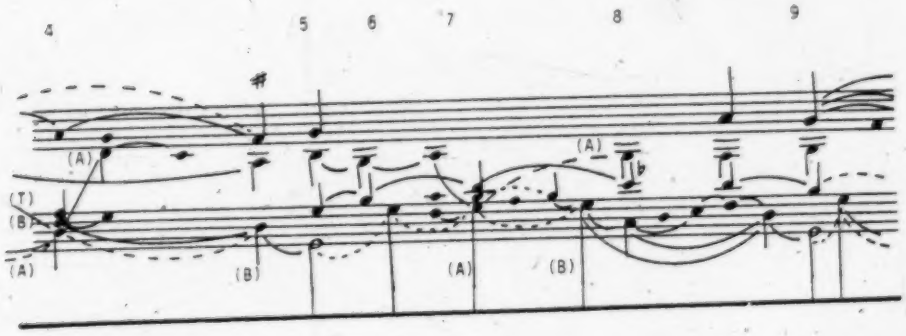
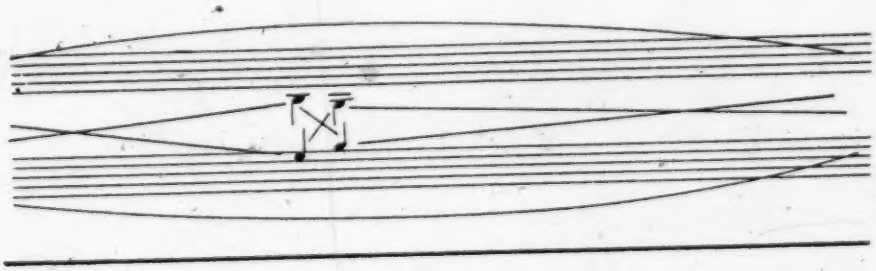
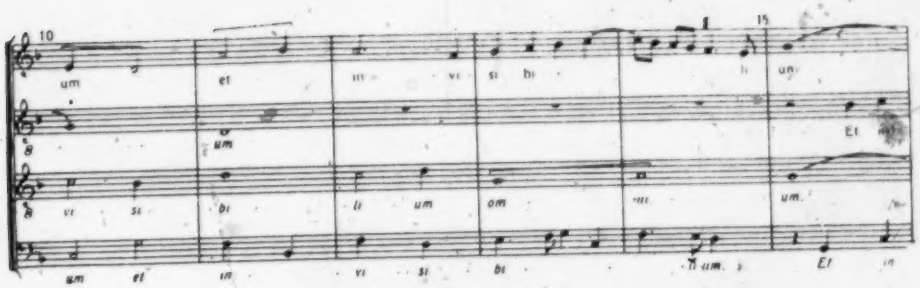
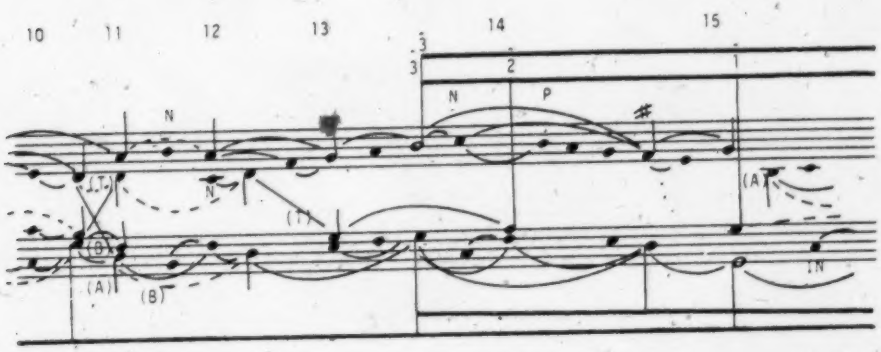
121 There are two reasons to assume that the circled g^3 in the tenor voice (m.3) is a misprint in the edition. First, the note g in the tenor creates parallel perfect octaves with the superius in mm.3-4. Second, subsequent statements of the cantus firmus in the tenor voice have the note b♭ here, rather than g.

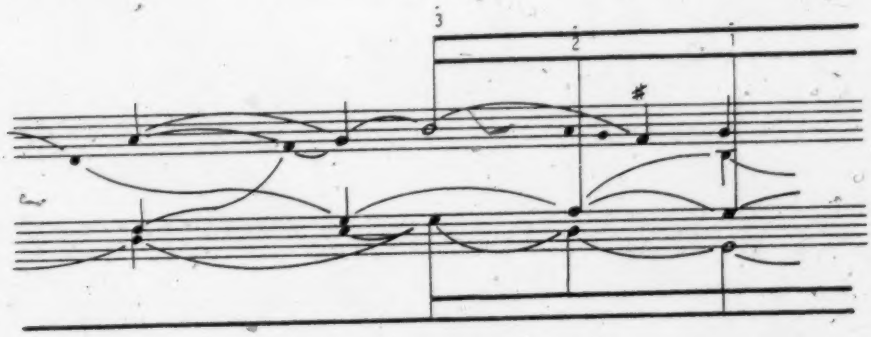

et ter rac. vi si bi li um om ni
li et ter rac. vi si bi li um om ni
rem cae li et ter rac.
li et ter rac. vi si bi li um om ni

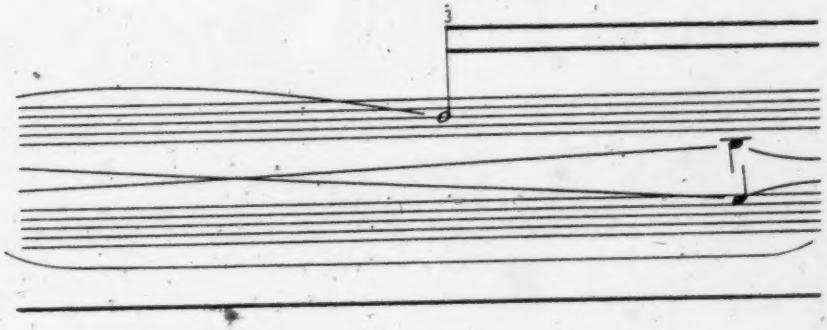

4
5
6
7
8
9
(A)
(T)
(B)
(A)
(B)
(A)
(A)
(B)

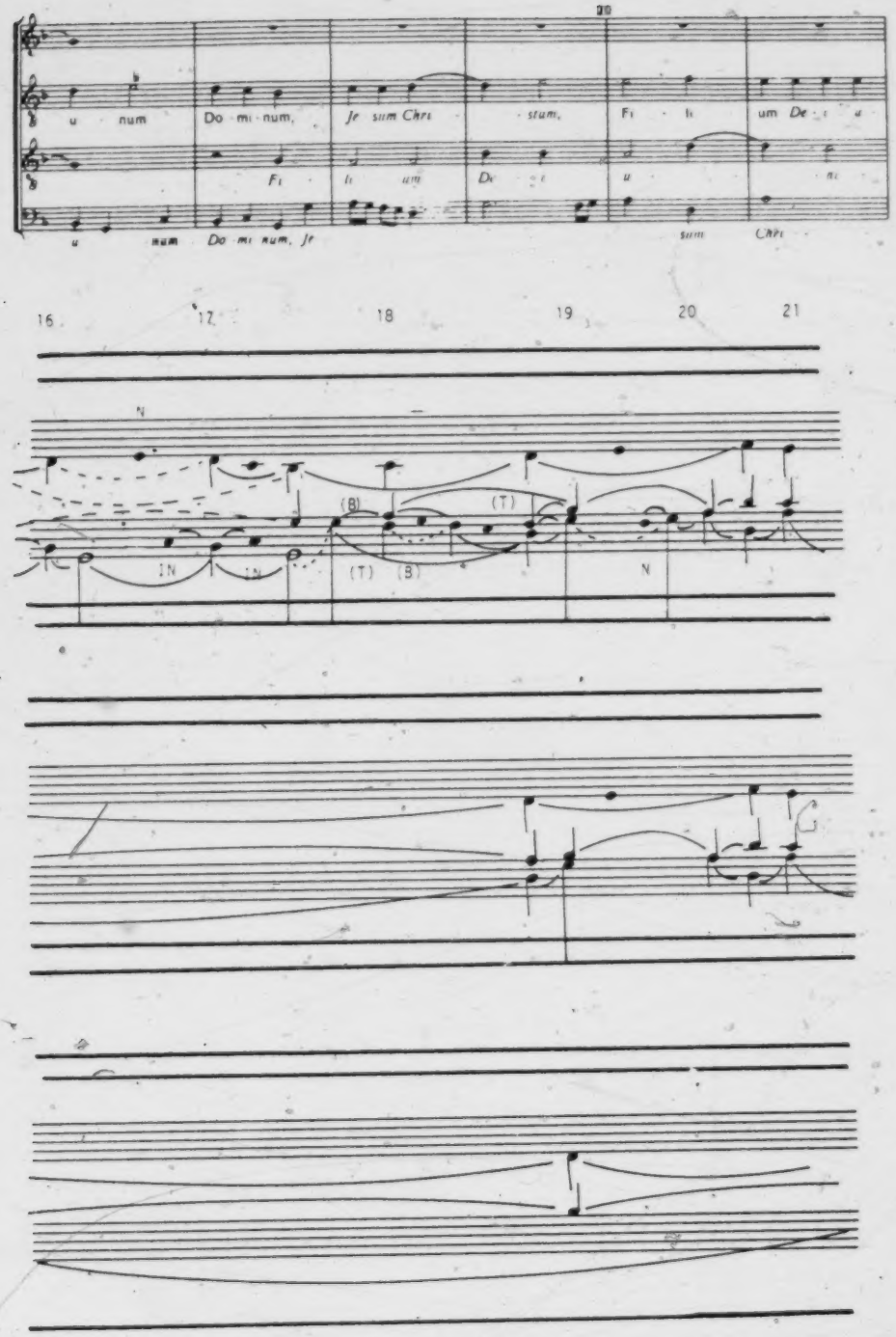


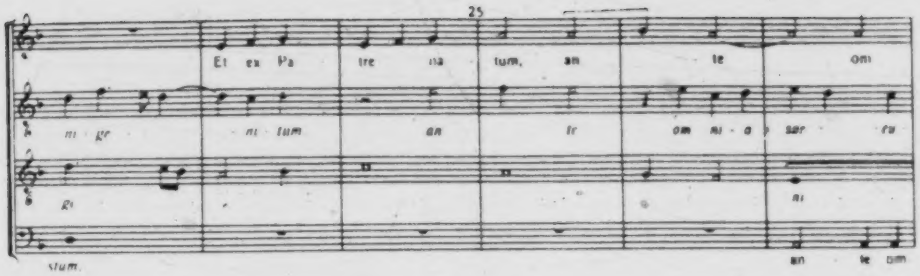

10
15
um
et
in
vi
si
bi
li
um
Et
vi
si
bi
li
um
om
um
um
et
in
vi
si
bi
Et
in

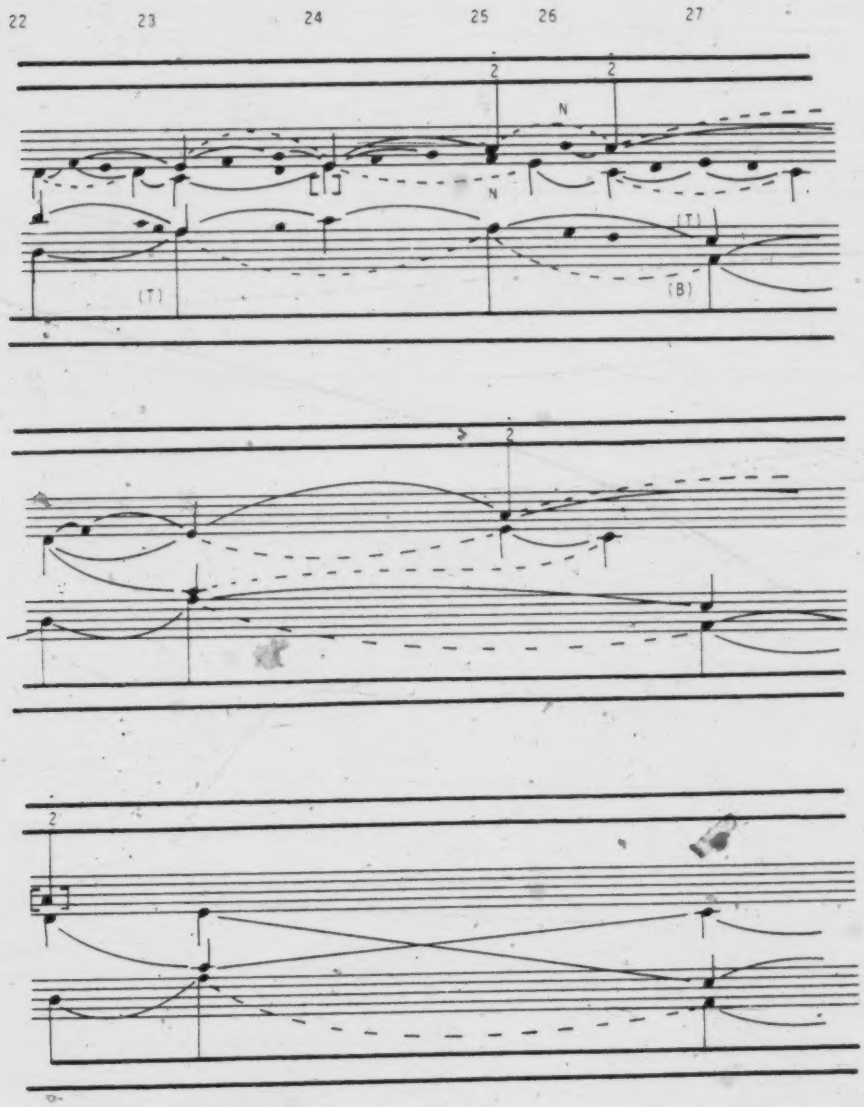

10
11
12
13
14
15
N
P
(T)
(B)
(A)
(B)
(T)
(A)
N

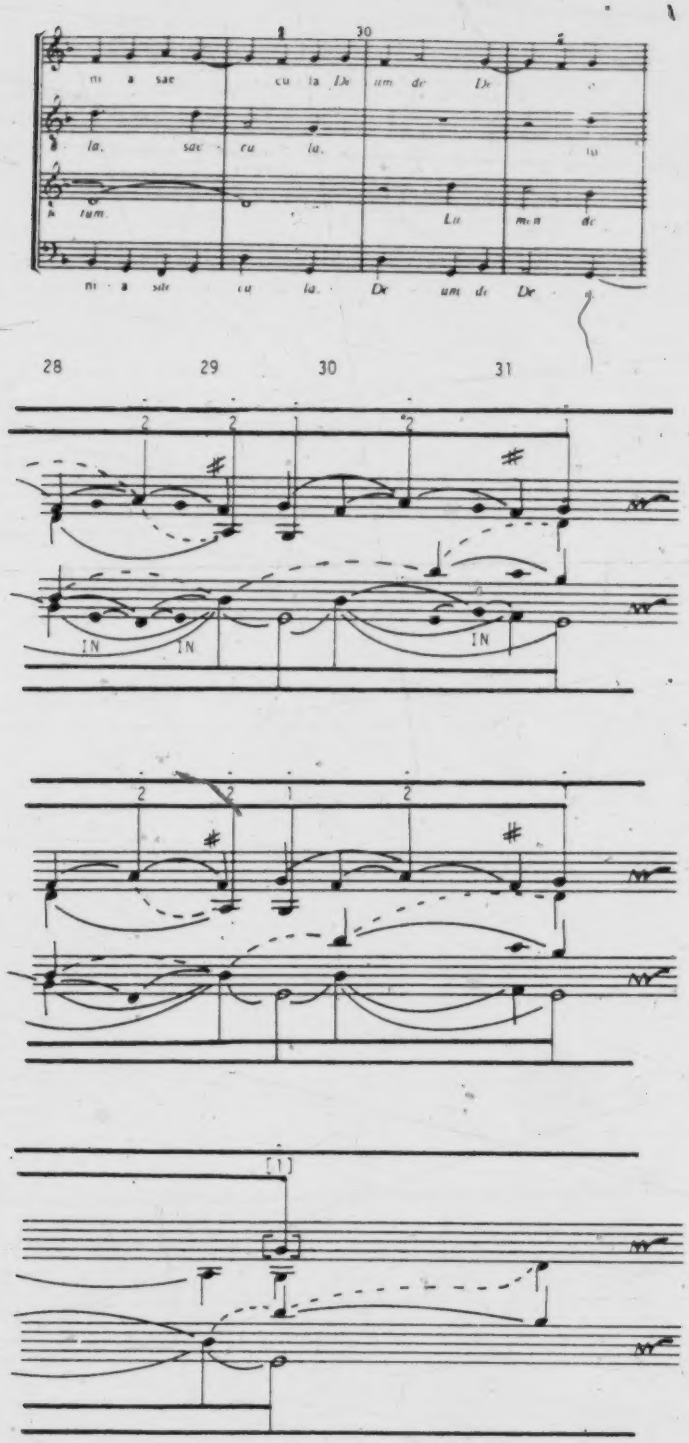





u num Do mi num, Je sum Chri stum, Fi li um De u
Fi li um De u
u num Do mi num, Je sum Chri
16 17 18 19 20 21
(B) (T)
IN IN (T) (B) N


25
Et ex Pa tre na tum, an te om
ni ge ni tum an te om ni a sur cu
gi ni
stum. an te om


22
23
24
25
26
27
2
2
N
N
(T)
(T)
(B)
2
2


30
28
29
30
31
IN
IN
IN
[1]

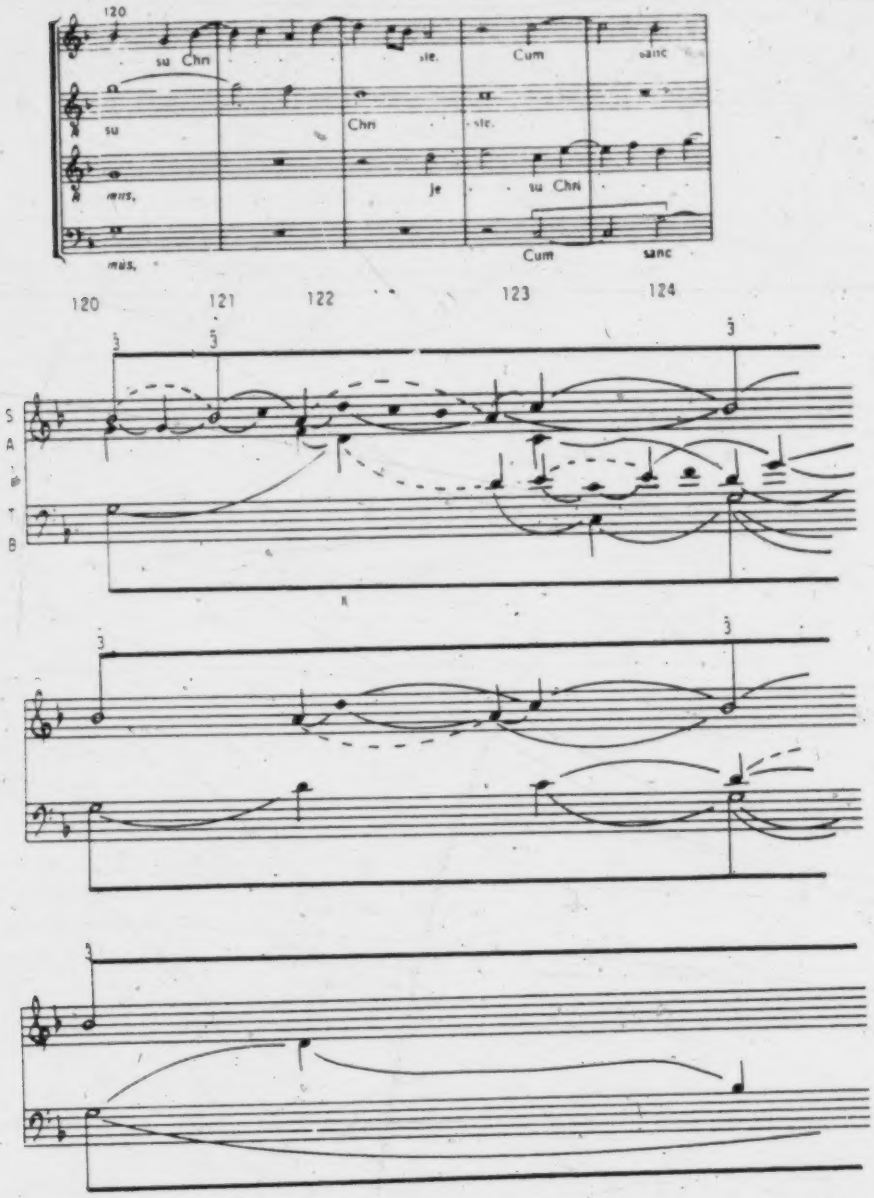
through an introductory C triad built on the opening rising third motive e-g, and is affirmed by the B5 cadence in mm.4-5. Once affirmed, G minor is simply prolonged until m.19. The superius establishes $\hat{3}$ ($b\flat^4$) in m.11 and a middleground $\hat{3}$-$\hat{2}$-$\hat{1}$ descent occurs in mm.13-15. The treatment of the c^5 in m.13 is worth noting, because the c first appears as a neighbour to the $b\flat^4$, but changes function when the bass changes to f^3 in m.14. When the c resolves, the $b\flat$ is no longer a structural tone, but part of a fifth-descent from c^5 to $f(\sharp)^4$. As the reductions indicate, the essence of the passage is the $\hat{3}$-$\hat{2}$-$\hat{1}$ descent above a g^3-d^3-g^2 bass.

After the cadence on G in m.19, the D triad is tonicized twice by A, once briefly in m.20, and then more firmly in mm.21-22. The D triad replaces G as the tonal center, and is prolonged until m.29. The prolongation is effected mainly by the A triad, which appears in m.23 and is itself prolonged by simple voice exchange and octave transfer until m.28. It is interesting to note that the G triad is prolonged by D, and the D triad is prolonged in turn by A, because the fifth-relationships between tonal areas in this section closely resemble the dominant-tonic relationships of tonal music. The subsequent return to D and cadence on G in m.29 are followed by a short codetta-like phrase that affirms G as the central sonority for the *Credo*.

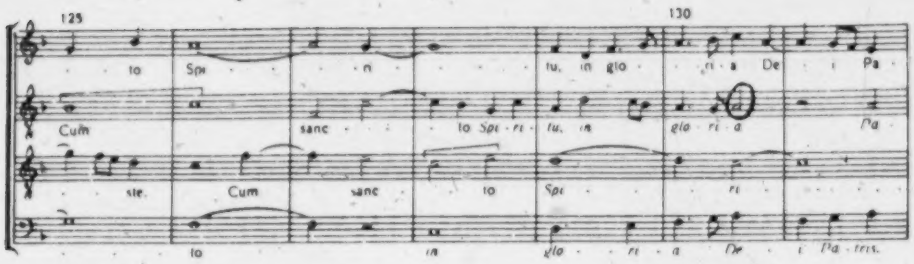
Middleground prolongation is not restricted to the beginning of a movement or section. Example 5-14 reproduces an excerpt from the Gloria of *Missa Ad fugam* as an example of middleground prolongation after an internal cadence. The G-minor triad in m.120 is the result of a strongly-stated B5 cadence in mm.119-120. This triad is prolonged until m.129, at which point the structural elements become obscured. The question arises whether the passage prolongs G or D. In Example 5-14a, the G triad in m.132 is interpreted as an event that prolongs rather than resolves the defining D triad established in m.129. In Example 5-14b, the same G triad is interpreted as a return to the structural central sonority, followed by a re-establishment of $\hat{3}$ in m.133 and a structural $\hat{3}$-$\hat{2}$-$\hat{1}$ descent in mm.134-135. There are two compelling reasons for accepting the reading posited in Example 5-14a. First, the bassus, although it crosses both altus and tenor in this passage, contains a strong ascent from d^3-d^4 and a subsequent descent back to d^3 in m.134. Second, the superius voice, which is aurally prominent as the upper voice in the passage, clearly outlines a D triad. Thus, D is heard as the prolonged sonority despite the G triads in mm.132 and 133-134.

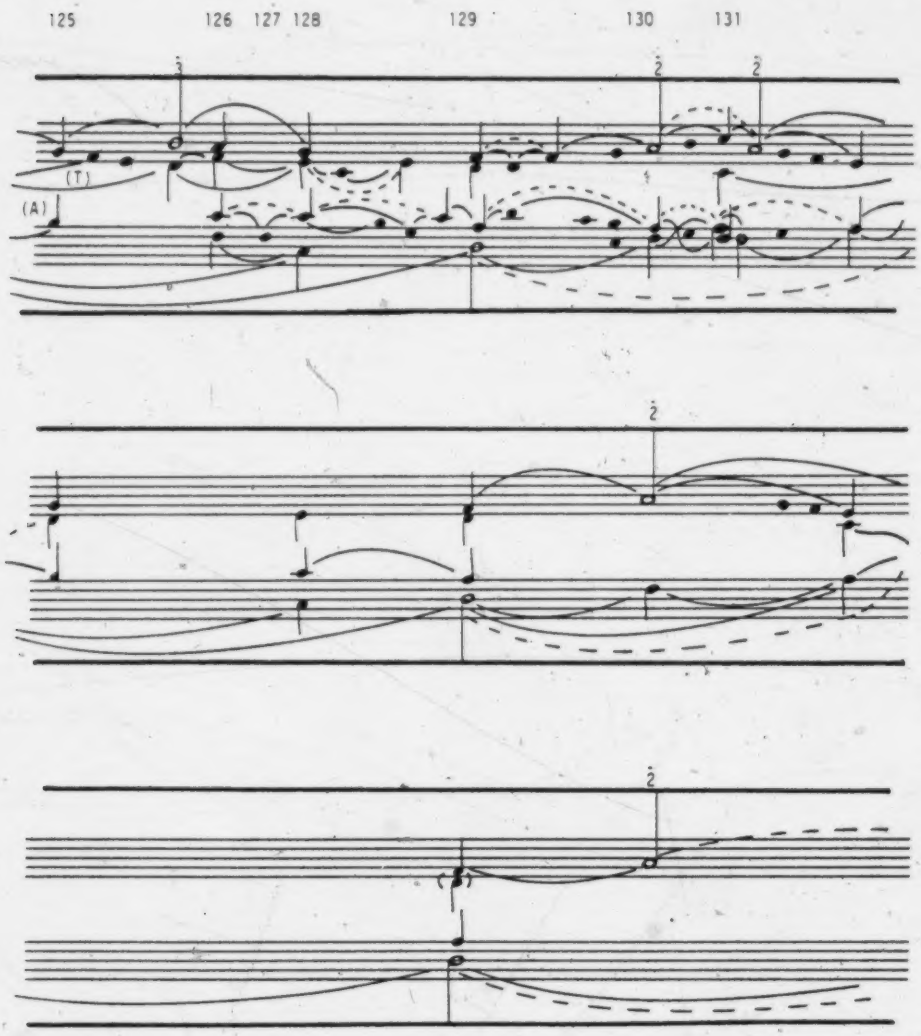
The apparent tonal relationships in this passage are worth noting. The preceding measures (mm.120-129) reveal a prolongation of G minor. One of the significant

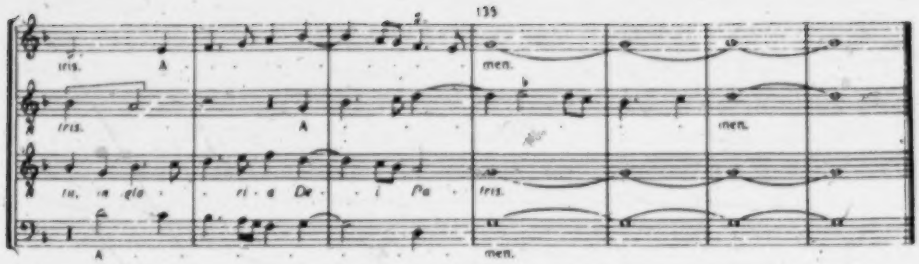
Example 5-14a. *Missa Ad fugam*, Gloria mm.120-138 with reductions.[122]

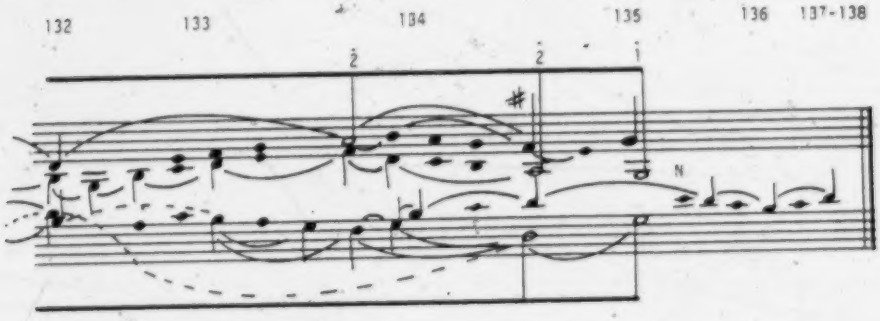


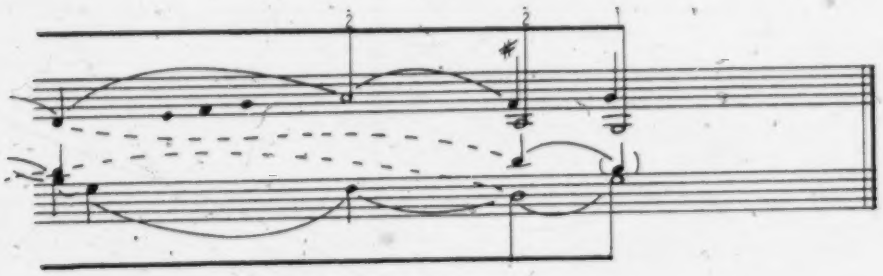
[122] The altus note a^3 that is circled in the score (m.130) is probably a misprint. Since the a creates parallel unisons with the bass, it is reasonable to deduce that the composer probably wrote a passing a^3-g^3-f^3 in the altus, crossing with the bassus f^3-g^3-a^3. This change has been incorporated into the analysis.

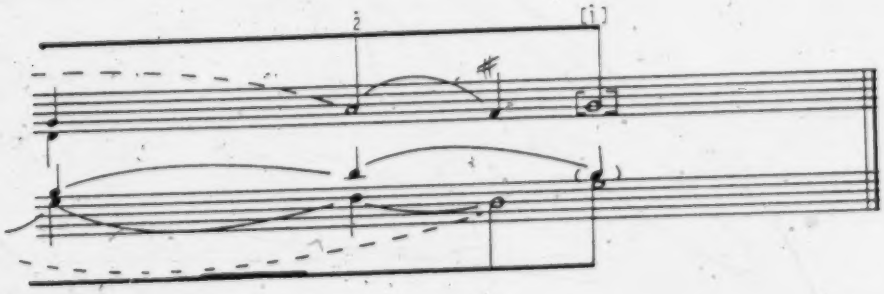

125
130
to Spi n tu, in glo ri a De i Pa
Cum sanc to Spi ri tu, in glo ri a Pa
ste. Cum sanc to Spi ri
to in glo ri a De i Pa tris.


125
126 127 128
129
130
131
(T)
(A)

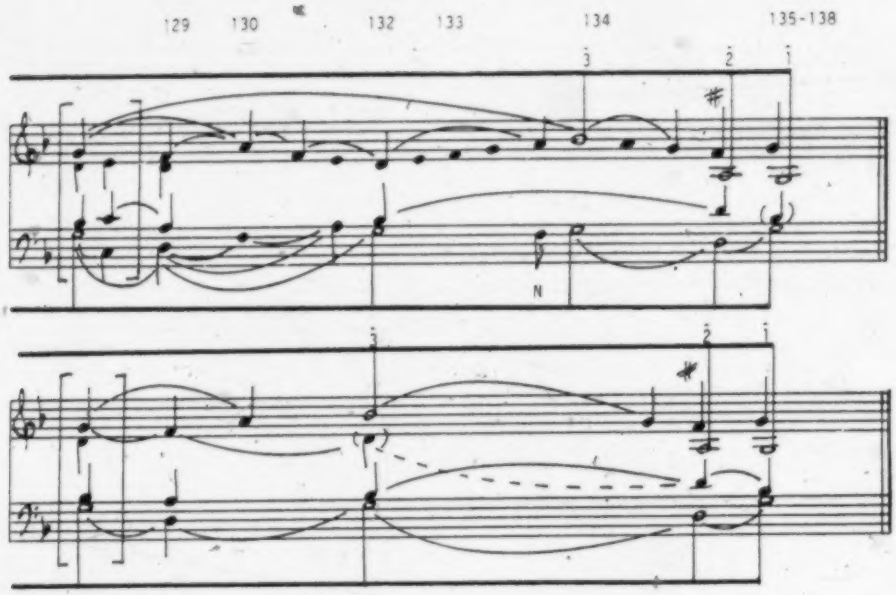

135
tris.
A
men.
tris.
A
men.
tu, in gla - ri - a De - i Pa - tris.
A
men.


132
133
134
135
136
137-138
2
2
1
N


2
2
1


2
[1]

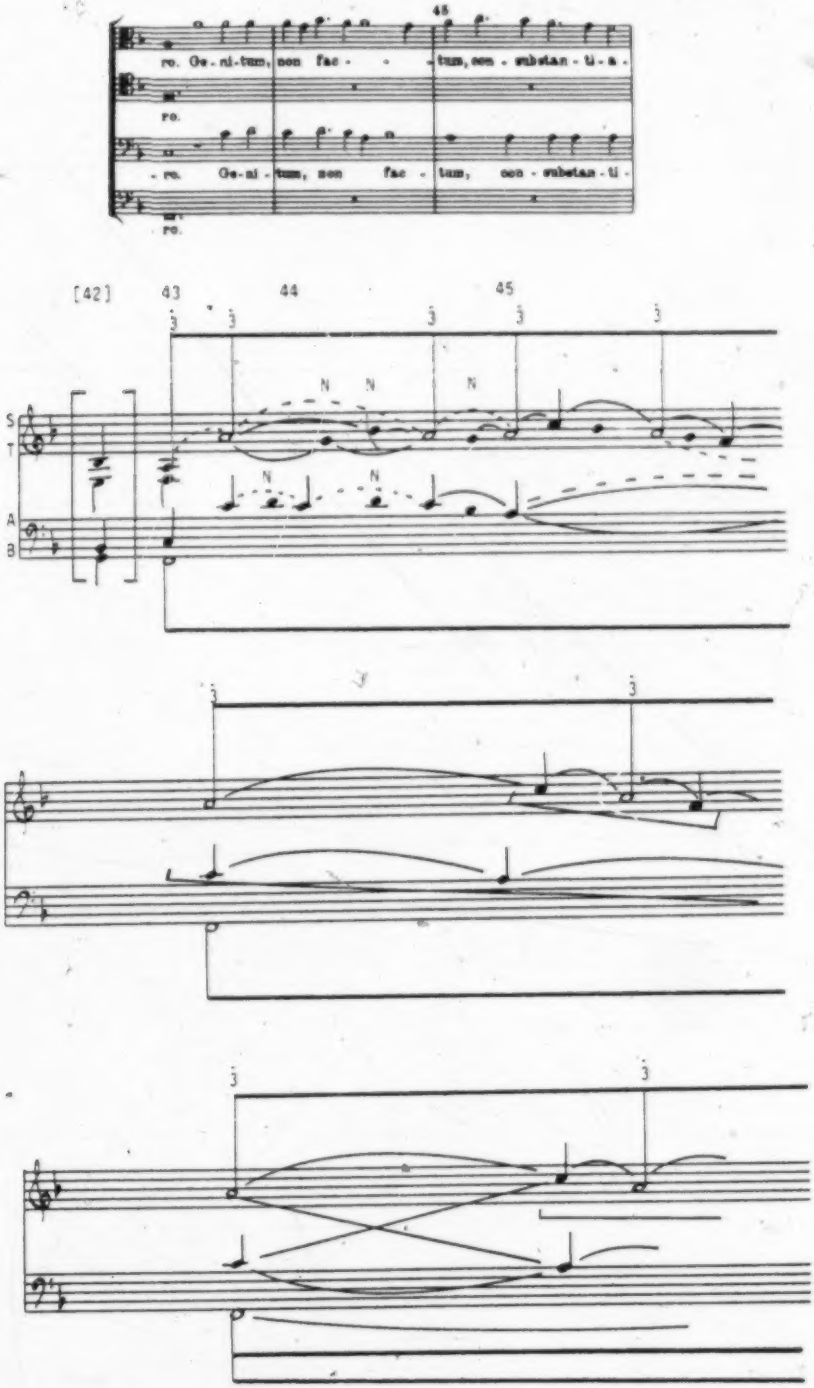
Example 5-14b. Alternate reading of mm.129-135 in Example 5-14a.

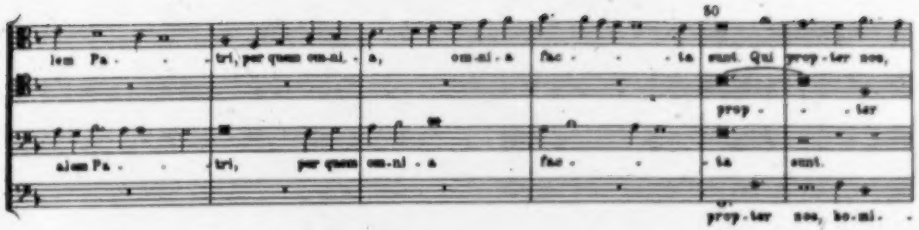


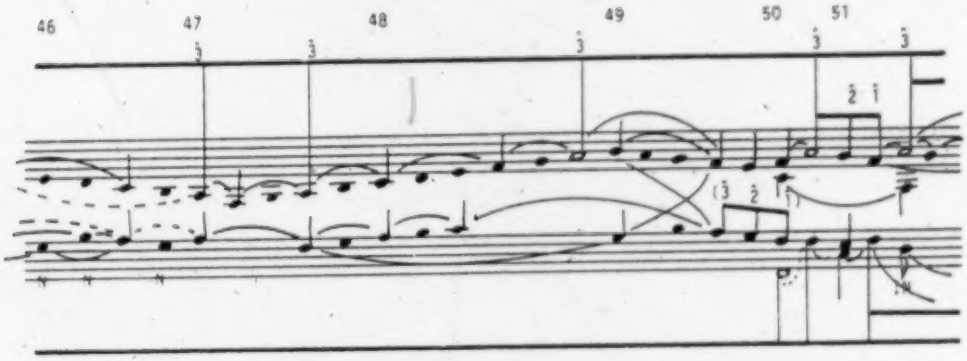
prolongational elements of that passage is the C triad--the triad a fifth below G. If this passage (mm.129-135) is considered to prolong D, then the G triad in m.132 is in the same fifth-relationship (plagal) with D as C is with G in the preceding measures. The first reading, therefore, seems to reveal a level of tonal coherence not found in the second.

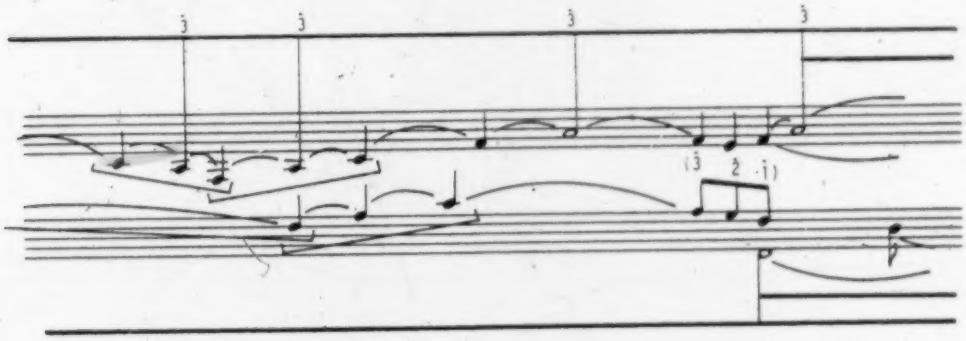
Another example of middleground prolongation after an internal cadence occurs in the Credo of *Missa L'homme armé sexti toni* (see Example 5-15). As in the excerpt discussed in Example 5-14, the triad at the beginning of the passage (in this case, the F-major triad in m.43) is the tonicized triad of a clearly-delineated cadence (full linear cadence) in mm.42-43. The a^2 in m.43 is transferred to its proper

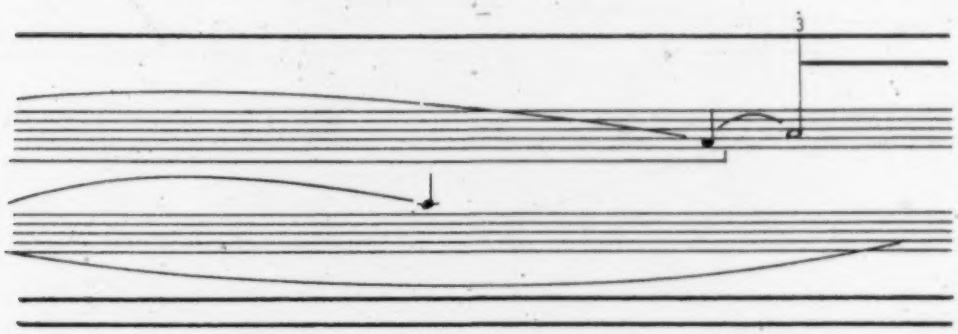
Example 5-15. *Missa L'homme armé sexti toni,* Credo mm.43-66 with reductions.

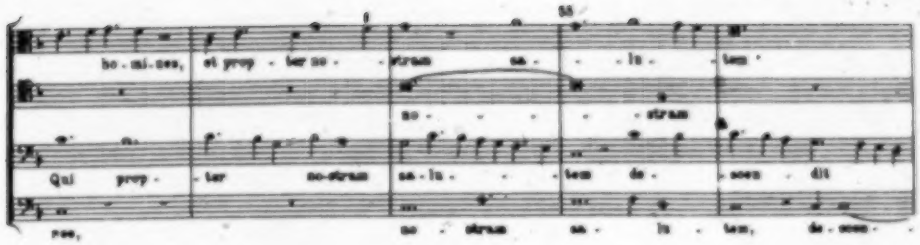


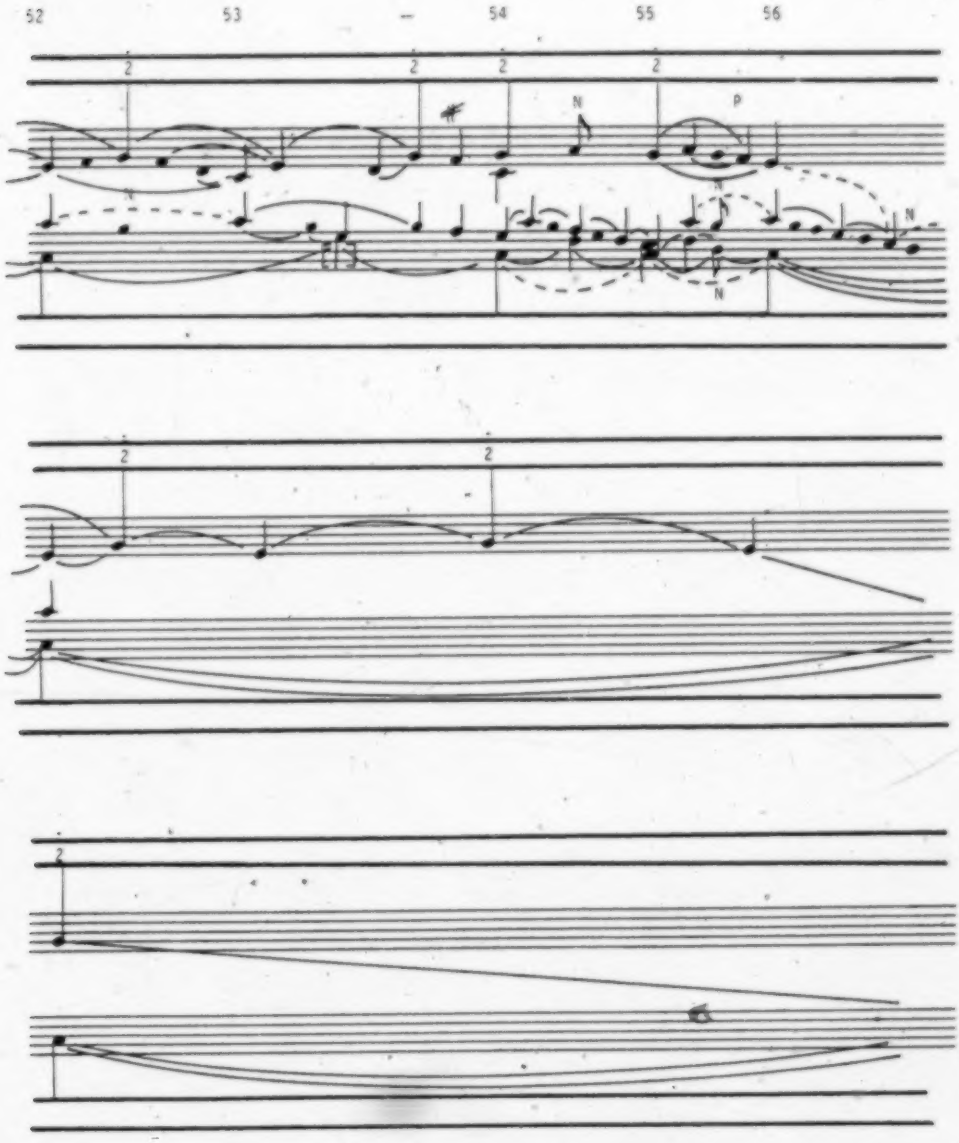

50
lem Pa - - tri, per quem om-ni - a, om-ni - a fac - - ta sunt. Qui prop - ter nos,
prop - - ter
alem Pa - - tri, per quem om-ni - a fac - - ta sunt.
prop - ter nos, ho-mi - -

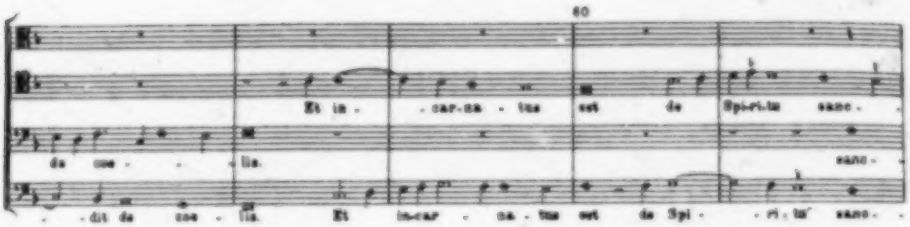

46
47
48
49
50
51

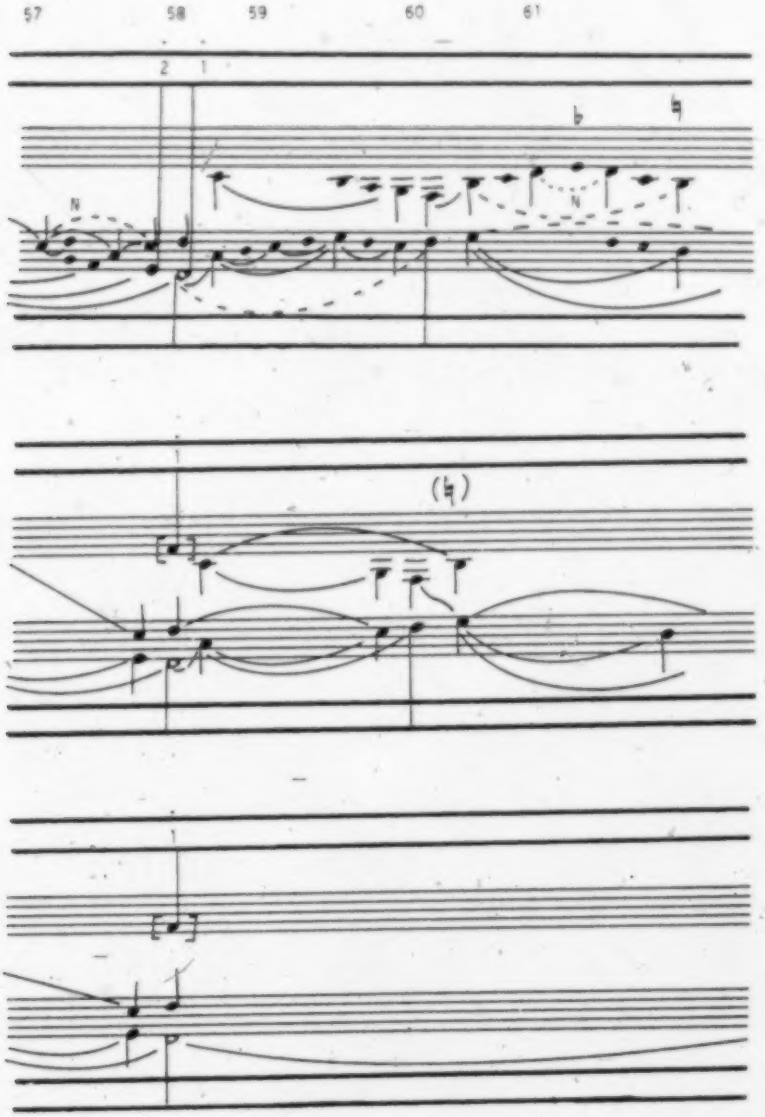





ho - mi - nes, et prop - ter no - stram sa - lu - tem
no - stram
Qui prop - ter no-stram sa - lu - tem de - scen - dit
nes, no - stram sa - lu - tem, de - scen -

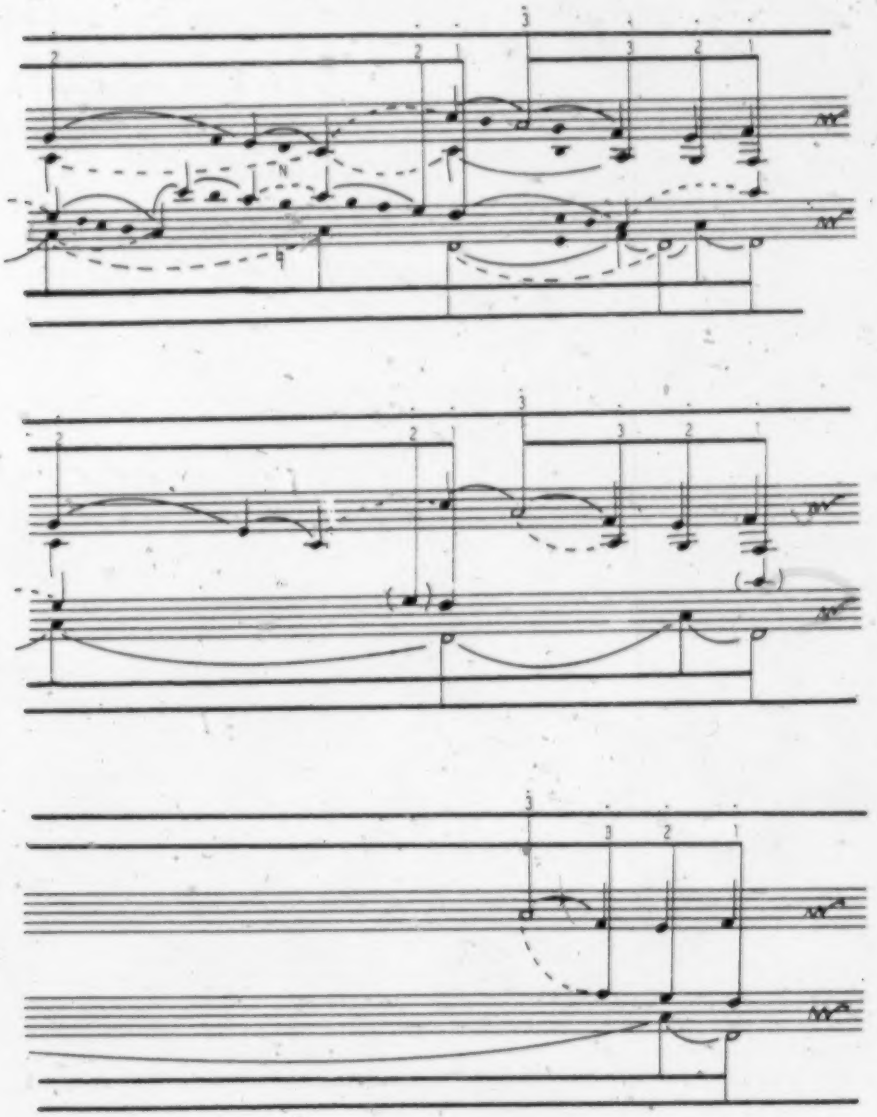

52
53
54
55
56


60
Et in - car-na - tus est de Spi-ri-tu sanc -
de coe - - lis.
sanc -
- dit de coe - lis. Et in-car - na - tus est de Spi - - ri - tu sanc -


57
58
59
60
61
2
1
N
N
(♮)

ex Ma-ri-a Vir-gi-ne et ho-mo fac-tus est. Cre-
to, et ho-mo fac-tus est. Cre-
to, ex Ma-ri-a Vir-gi-ne, et ho-mo fac- tus est. Cru-ci-
to, et ho-mo fac-tus est. Cru-

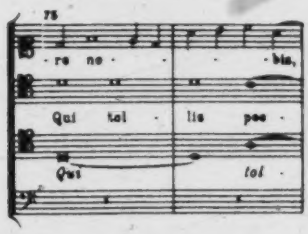
62 63 64 65 66

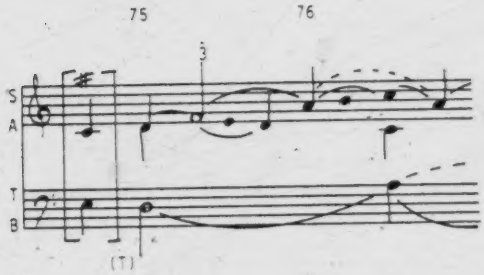


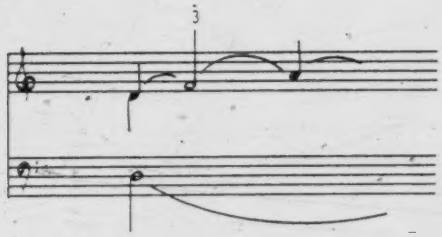
register as the a^4 *Kopfton*. The first section of the passage prolongs the F-major triad and $\hat{3}$, as the a^4 descends to an inner voice a^3 in m.47, and ascends again by step to a^4 in m.49. C major is established as an important middleground event by the incomplete linear cadence in m.52, and is prolonged until the cadence on F in m.58. The superius prolongs $\hat{2}$ above the C triad, but at the moment of resolution in m.58 the superius is no longer sounding. The resolution to $\hat{1}$ is actually effected by the bassus in this cadence. When the C triad returns in m.60, the superius re-establishes g^4 as $\hat{2}$, and eventually returns to $\hat{3}$ in m.65. Scale degree $\hat{3}$ is then transferred immediately to an inner voice (the tenor) for the $\hat{3}$-$\hat{2}$-$\hat{1}$ descent and cadence in mm.65-66.

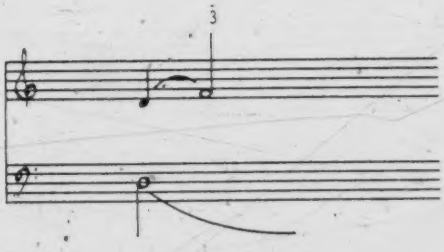
The final example of middleground prolongation is provided in Example 5-16. Once again the music resumes after an internal cadence (a two-voice full linear cadence between superius and bassus in mm.74-75), and again the first measures of the passage are a simple prolongation of the tonicized triad, in this case, D minor. The analysis shows a deeper-level prolongation deriving from a foreground event. After its initial d^3-c^3-d^3 neighbour motion in mm.75-81, the bassus descends to a^2 through an IN $b(\flat)^2$. The A triad built on a^2 is prolonged until its resolution to D in m.87. The $b(\flat)$-a IN is the precedent for the section from mm.88-92, where the IN $b(\flat)^2$ is extended and

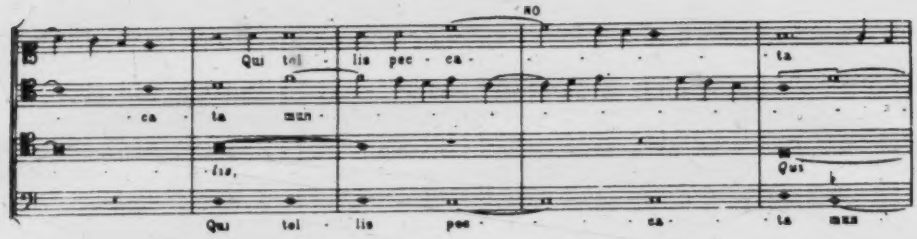
Example 5-16. *Missa L'homme armé super voces musicales*, Gloria mm.75-97 with reductions.



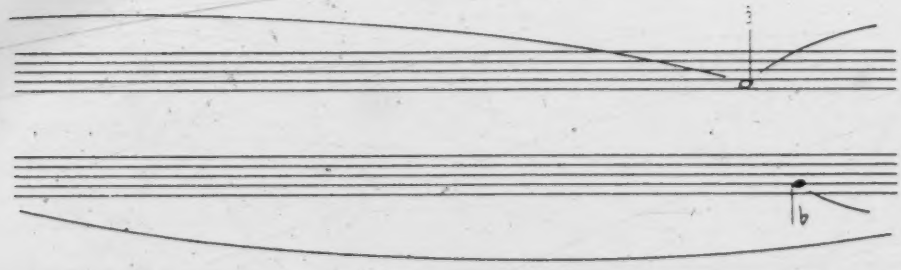


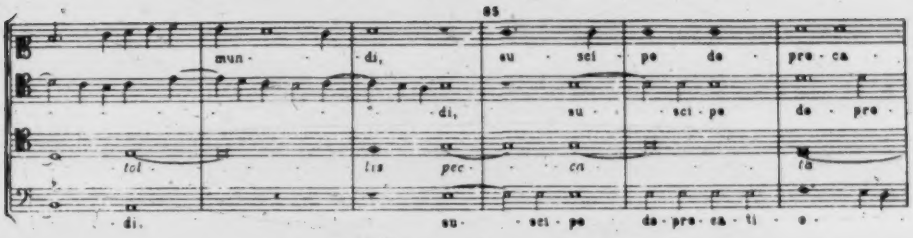




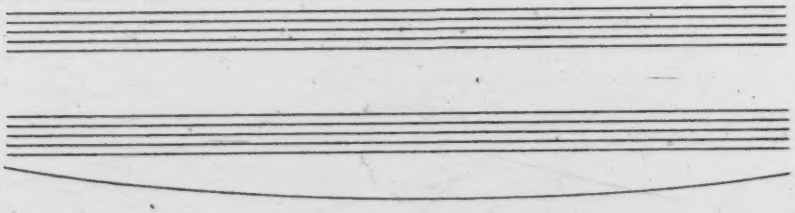

Qui tol - lis pec - ca - ta
ca - ta mun -
lis,
Qui
Qui tol - lis pec - ca - ta mun

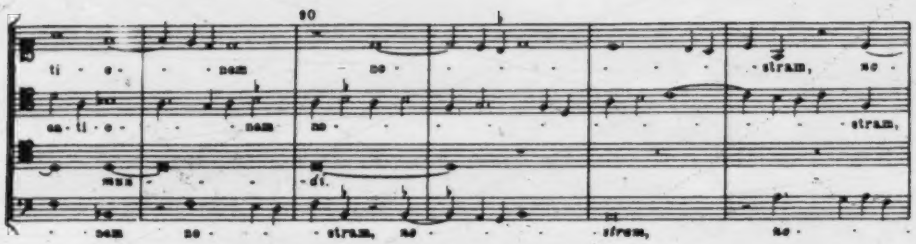
77
78
79
80
81

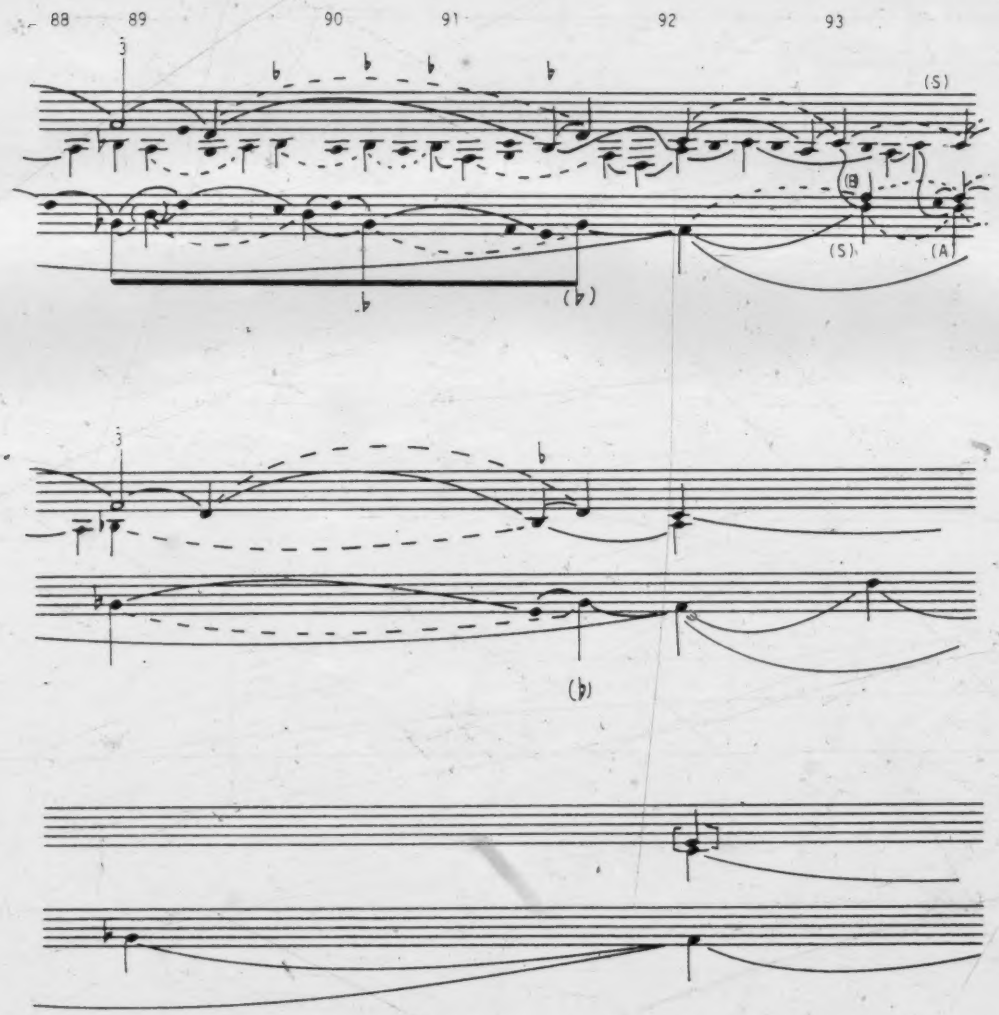


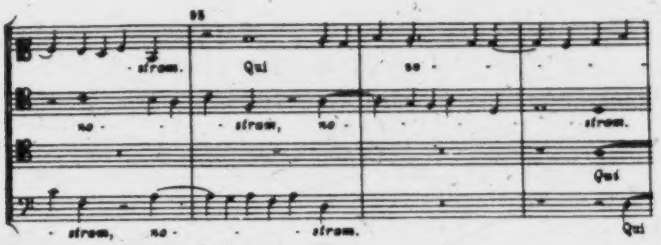

85
mun - di, su - sci - pe de - pre - ca -
di, su - sci - pe de - pre -
tol - lis pec - ca ta
di. su - sci - pe de - pre - ca - ti - o -

82
83
84
85-86
87
3
(B)
5 - 6
(T)
(B)

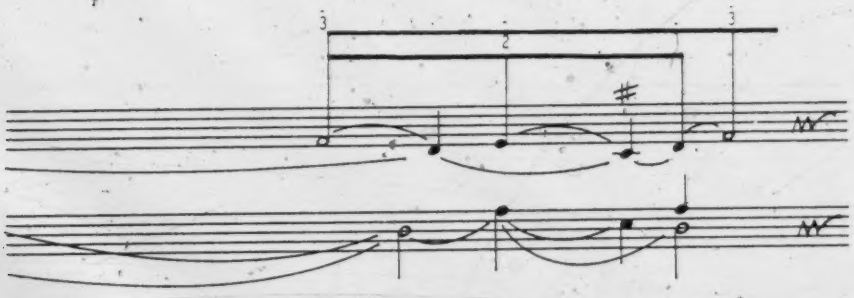


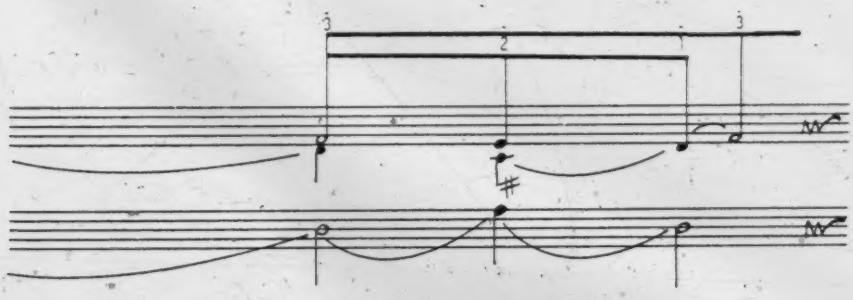

90
ti - e - - nem no - - - - - - stram, no -
ca - ti - e - - nem no - - - - - - - stram,
mun - - - - di.
- nem no - - stram, no - - - stram, no - -


88
89
90
91
92
93
(S)
(B)
(S)
(A)
(♭)
(♭)


95
strom.
Qui
se
no
strom, no
strom.
Qui
strom, no
strom.
Qui

94
95
96
97
(S)
(A)
(B)
(B)
(S)
(A)
(B)
(A)
(B)





tonicized. However, it still prolongs the preceding D triad, whose goal is the A triad in m.93. The A triad is prolonged in turn until the two-voice cadence on D in m.97.

A noticeable pattern has emerged from the preceding analyses: middleground prolongation in the works considered seems to occur principally at the beginning of a movement or section, or after a strong internal cadence. This may be explained by the highly sectionalized character of the masses. Each of the five movements is divided into large sections (identified, for the works discussed in this study, in Appendix 1), and each section is further divided into smaller subsections demarcated by internal cadences. The internal cadences seem to provide the harmonic points of reference for a work, and these points of reference are seen most clearly at the middleground level. The analyses also reveal a second pattern: foreground and middleground events (especially at the beginning of a movement or section) often seem to foreshadow tonal structures at the deepest levels of the music.

CHAPTER VI: PROLONGATION: DEEPER LEVELS

Coherent background structures are often evident in Josquin's masses, and occasionally they reflect surface elements found in the music. The deeper levels are usually simply constructed (as was the excerpt in Example 5-15), but foreground and middleground events may be extremely complex. Some of the background structures exhibit vertical relationships that are similar to those found in tonal music, and some sections of the masses seem to have background structures that derive from foreground gestures.

An incomplete linear cadence in the Kyrie of *Missa La sol fa re mi* provides the first example of deeper-level prolongation (see Example 6-1). The opening of the Kyrie establishes the A-minor triad as the central sonority. The bassus enters as the three upper voices cadence on A minor in m.9, and the triad is prolonged until the incomplete linear cadence on E in m.13. If the accidental suggested by Smijers in m.13 is applied, the upper-voice leading tone has a strong tonal tendency to return to the central A-minor sonority. The beginning of the Christe provides a registrally-consistent resolution of the E triad over the course of the imitative entries (mm.12-29),[123] and thus reveals prolongation at the deepest levels of structure.

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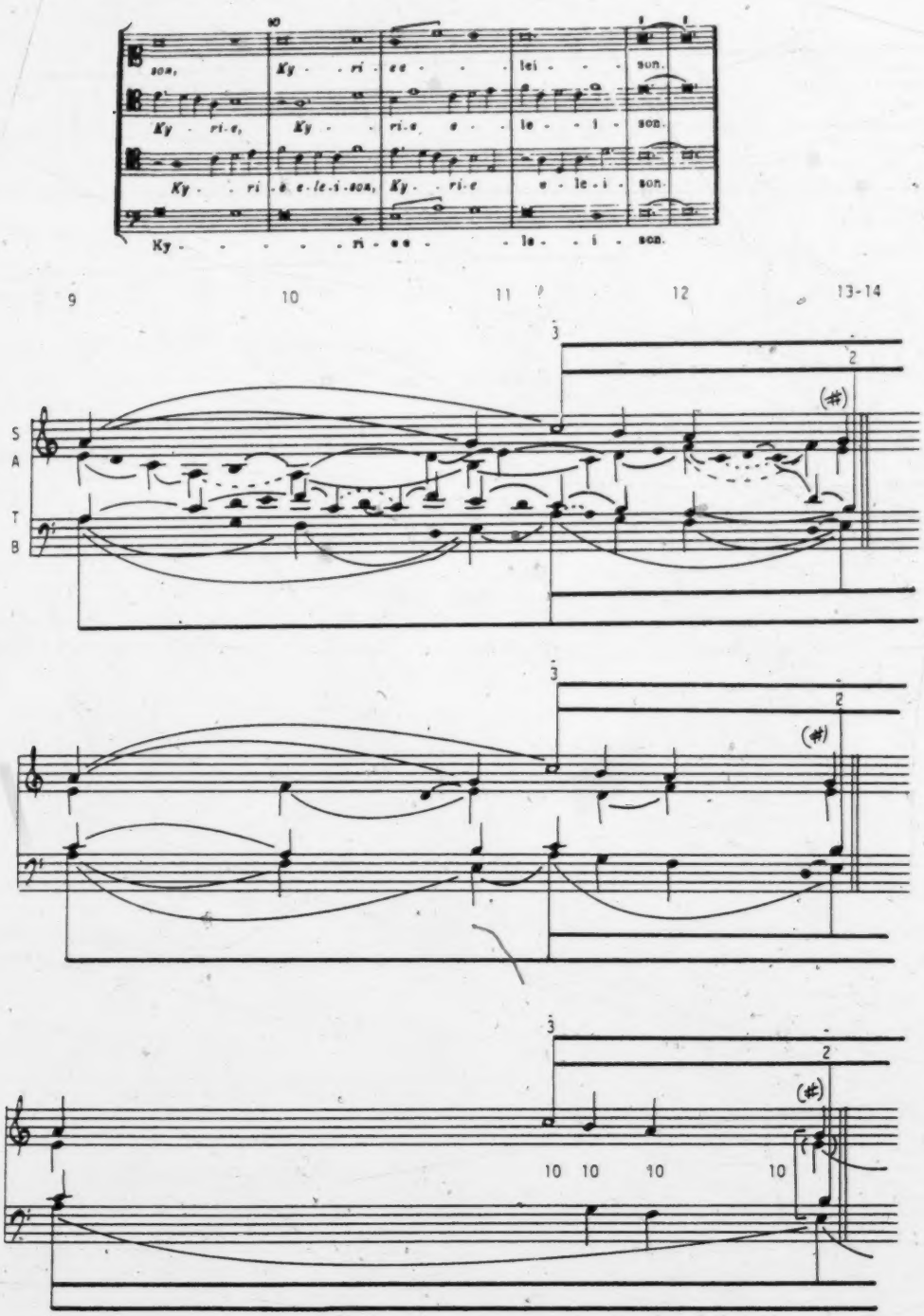
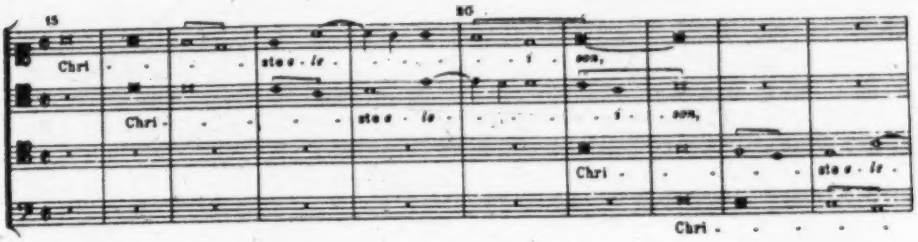
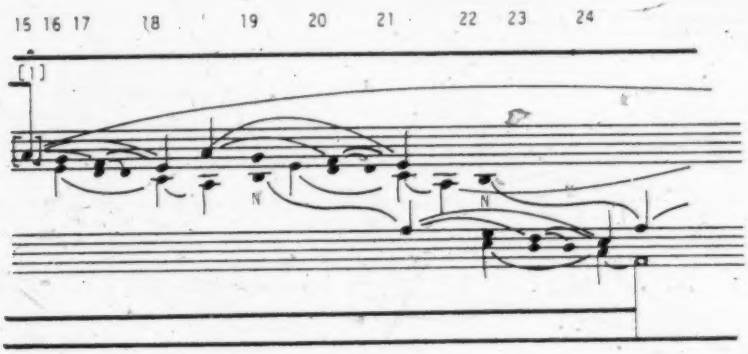
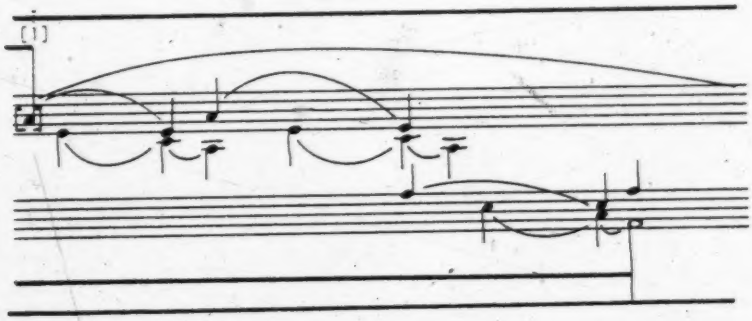
[123] The descending arpeggiation of the A minor triad through the four voices is discussed fully in Chapter IV, pp.60-62.

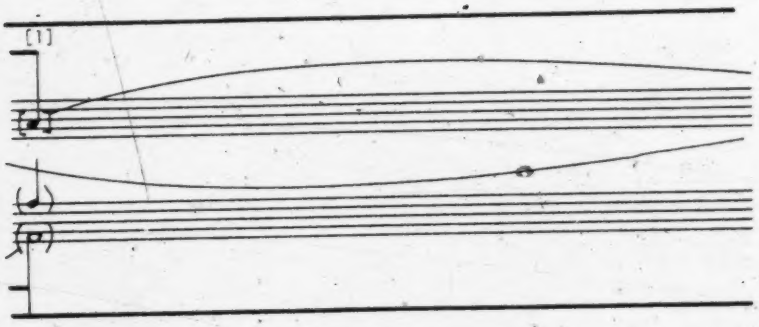
Example 6-1a. *Missa La sol fa re mi*, Kyrie mm.9-29 with reductions.

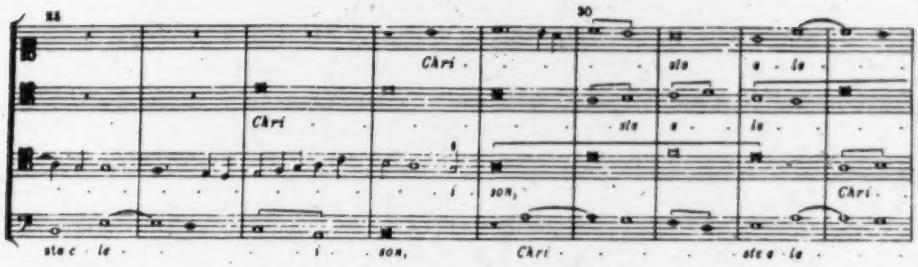


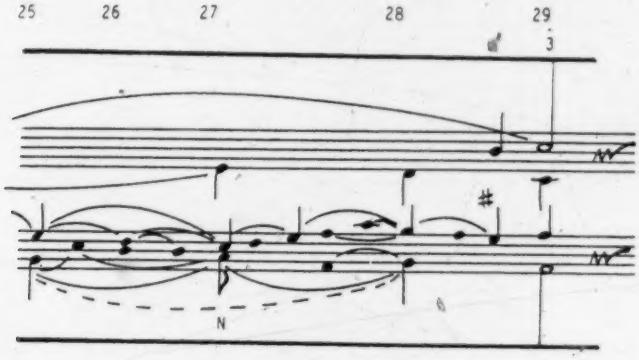

15
20
Chri - - - - ste e - le - - - - - i - son,
Chri - - - - ste e - le - - - - - i - son,
Chri - - - - ste e - le -
Chri - - - - -

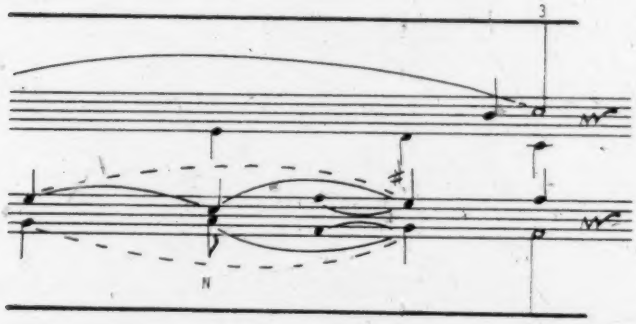

15 16 17 18 19 20 21 22 23 24
[1]
N
N

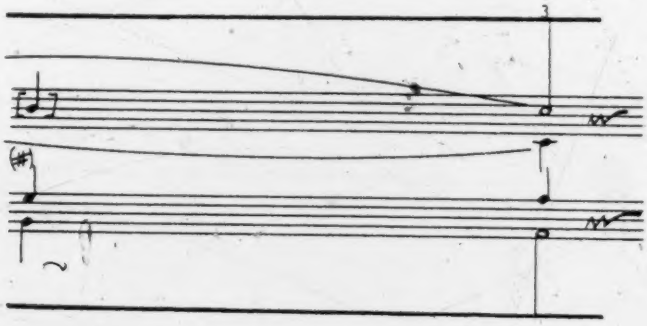

[1]


[1]


Chri
sto
e le
Chri
sto
e le
son,
Chri
sto c le
son,
Chri
sto e le

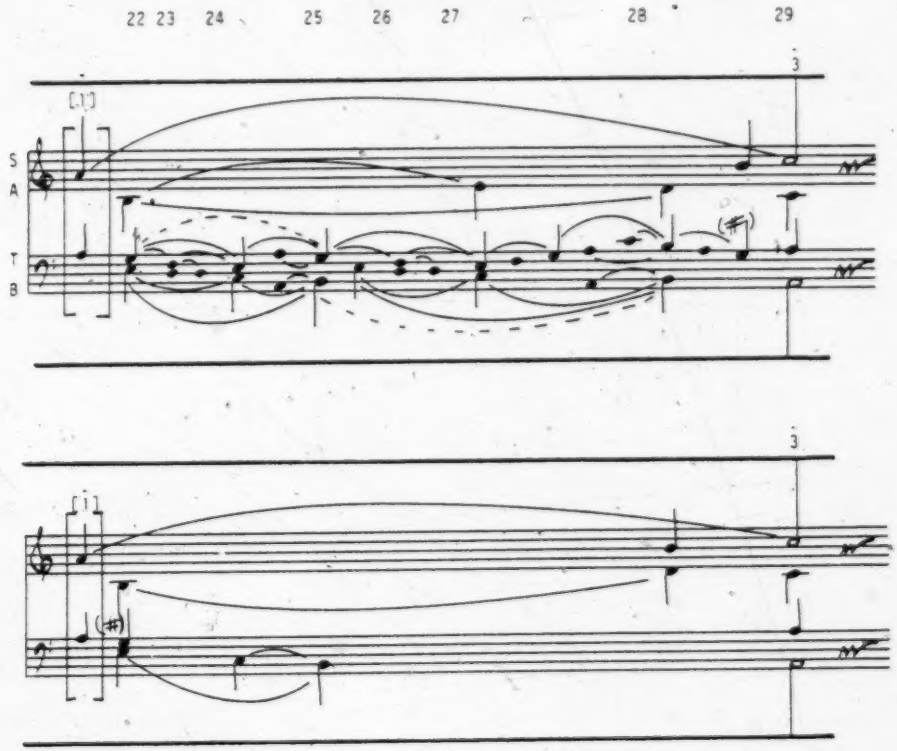

25
26
27
28
29
3
N


3
N


3

Two interpretations of the passage from mm.22-29 are possible. The first (Example 6-1a) suggests that the a^2 reached in the bass in m.24 is the note that completes the resolution of the E triad. The following b^2 prolongs the a^2, and is itself prolonged by the repetition of the *la sol fa re mi* motive until the resolution on a^2 in m.29. The second reading of the passage (Example 6-1b) suggests that the first b^2 prolongs e^3 in the descent to a^2. The descent

Example 6-1b. Alternate reading for mm.22-29 in Example 6-1a.



and the b^2 are interrupted when the *la sol fa re mi* gesture is repeated, and the e^3-a^2 descent is finally completed in

m.29. Both readings are correct, and in either case, the important deeper-level event in the passage is the resumption of scale degree $\hat{3}$ (c^3) over the central A-minor triad at the cadence in m.29. The E triad from mm.13-14 is certainly fully resolved at this point, and all four voices continue uninterrupted until the end of the Christe section fifteen measures later.

A second example of background-level prolongation occurs throughout the complete Kyrie of *Missa L'homme armé sexti toni* (see Example 6-2).[124] The first Kyrie (mm.1-18) establishes the F-major triad as a central sonority, and has a prolonged C triad from mm.9-12. The Christe section (mm.19-52) immediately leaps to a C triad, and that triad is prolonged until the end of the section. The middle-ground graph in Example 6-2 indicates that the G triad is the main prolongational event in this section, and that the prolonging G is itself prolonged in mm.36-40. The prolonged G and C triads in the Christe exhibit the same fifth-relationship as the F and C triads prolonged in the opening Kyrie (in tonal terms, a tonic-dominant relationship). The bassus is acting loosely as the cantus firmus voice for this section; that is to say, the second part of the *L'homme armé* melody is identifiable as the cantus firmus in the bassus, in spite of very free rhythmic

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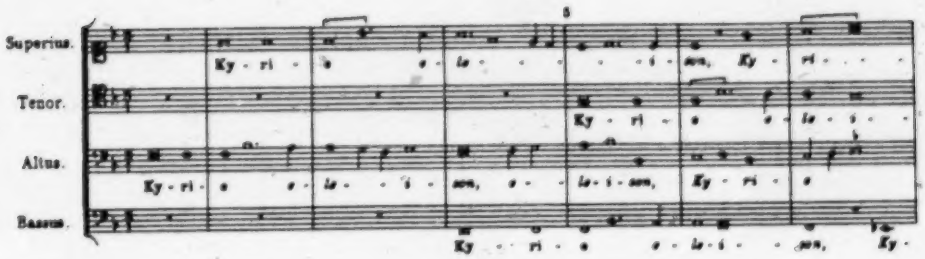
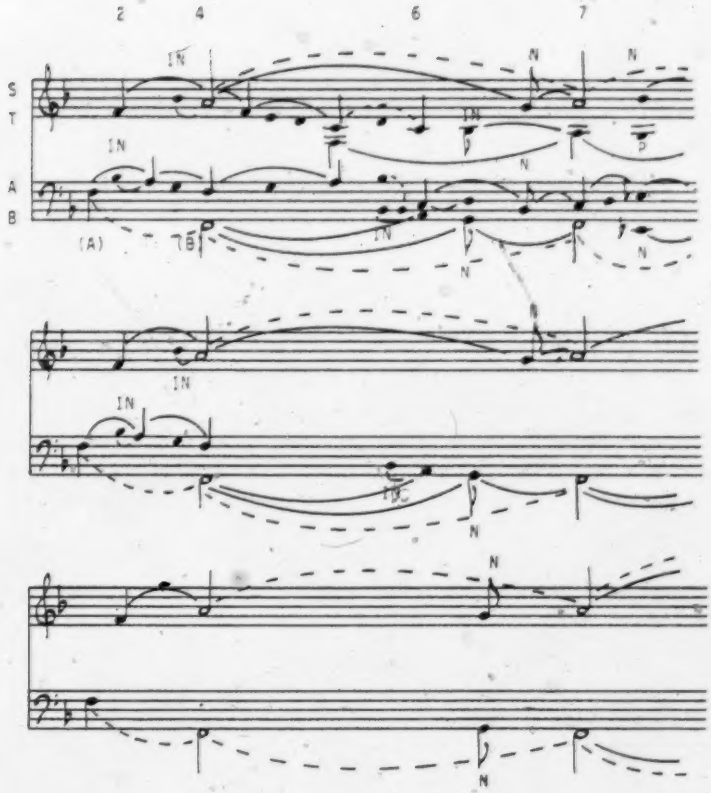
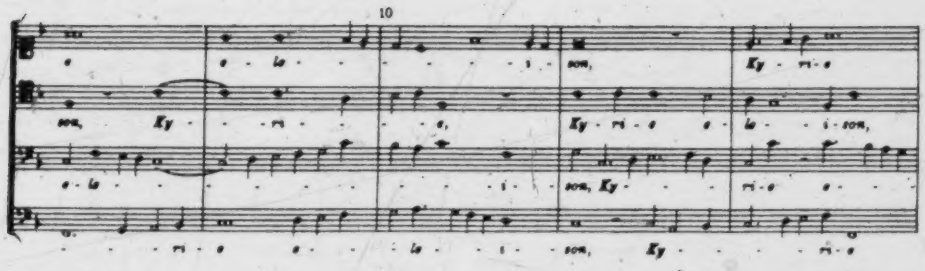
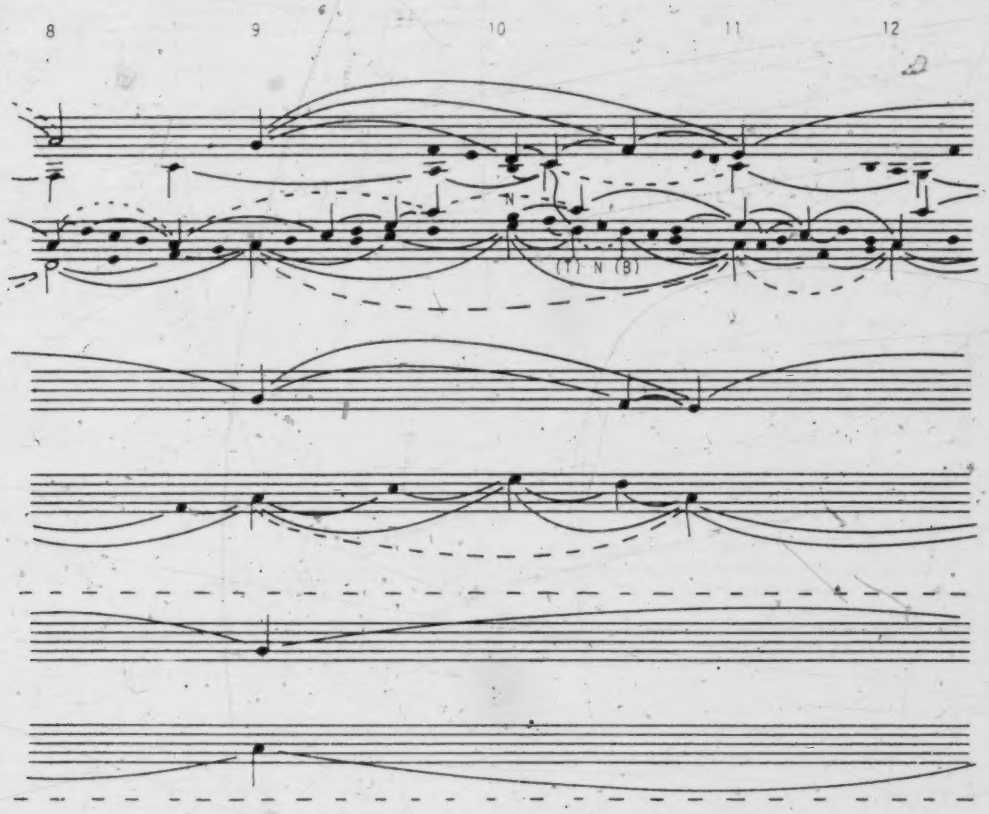
[124] The first section of the Kyrie has already been discussed in the context of triadic arpeggiation, Chapter IV, pp.44-46.

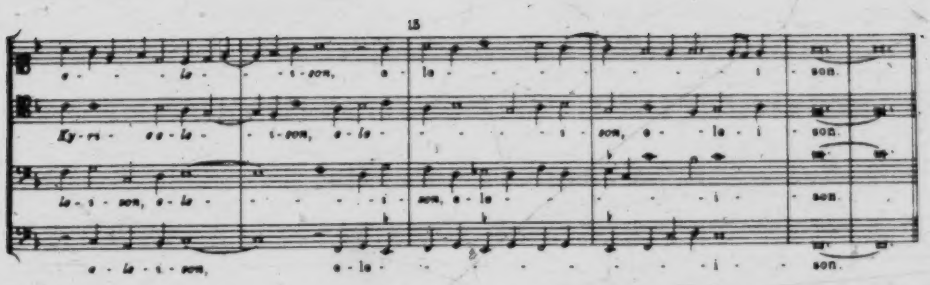
Example 6-2. *Missa L'homme armé sexti toni*, complete Kyrie with reductions.

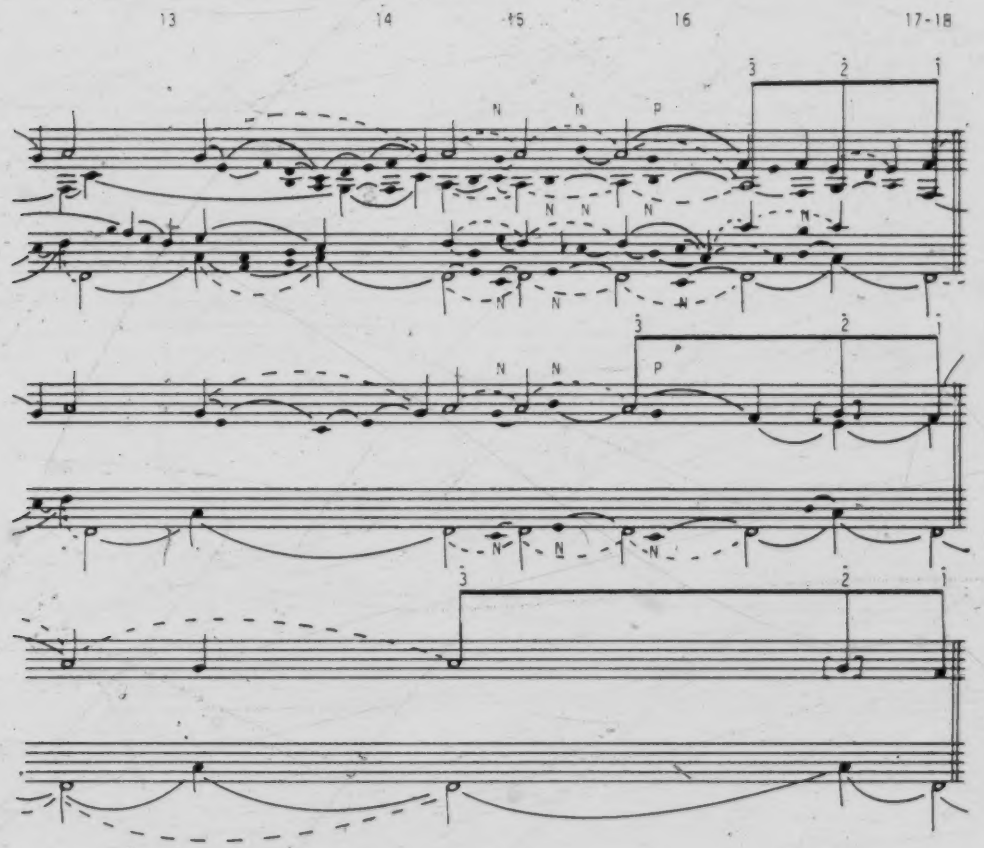


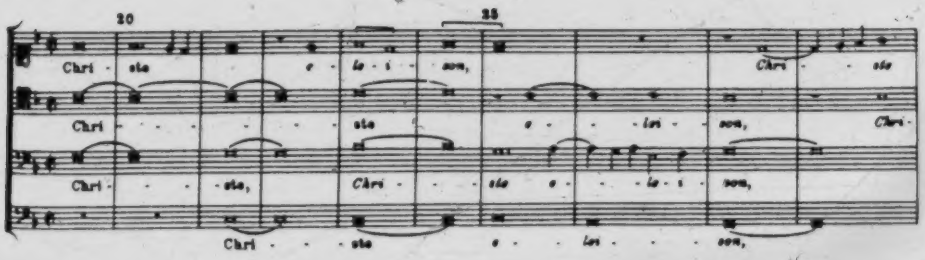


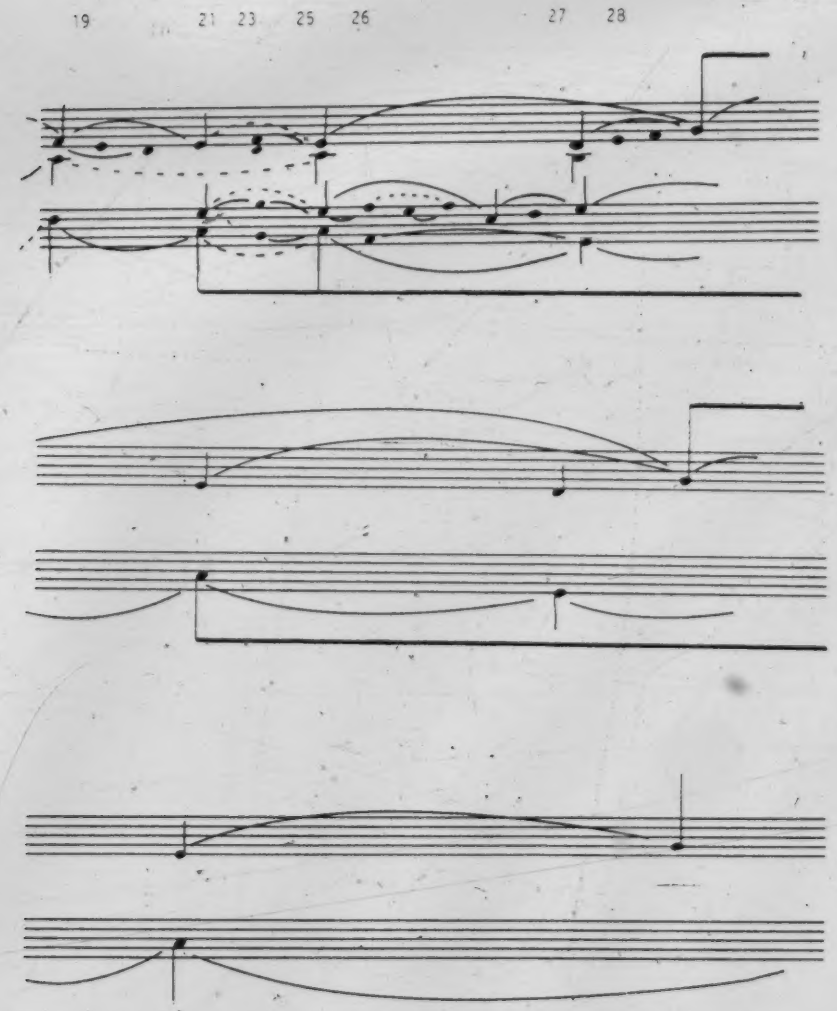

10
e e - le - - - - - i - son, Ky - ri - e
son, Ky - - ri - - - e, Ky - ri - e e - le - - i - son,
e - le - - - - - - - - - i - son, Ky - - - ri - e e - -
- - - ri - e e - - le - - i - son, Ky - - - - ri - e

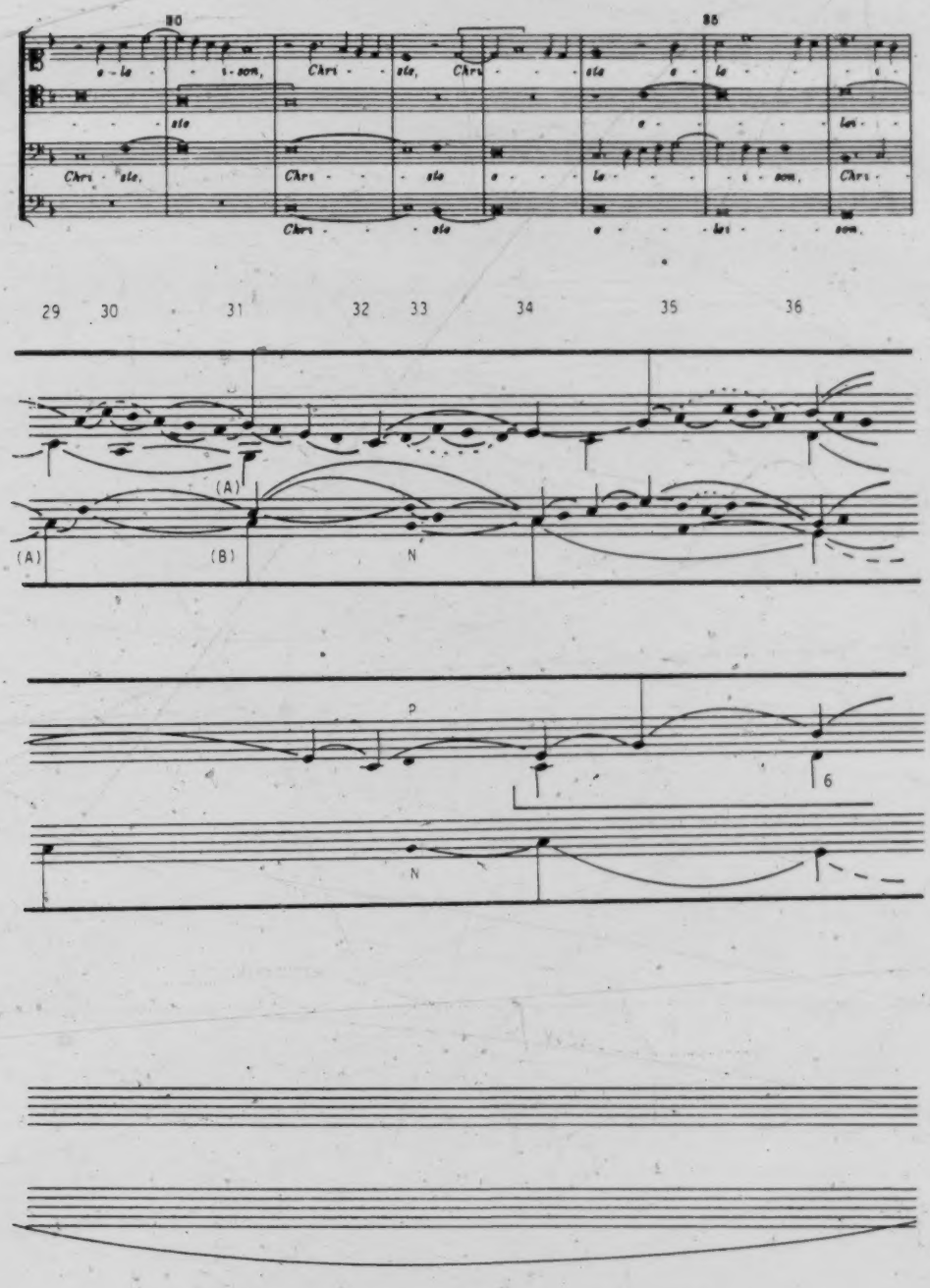

8
9
10
11
12
N
(T) N (B)

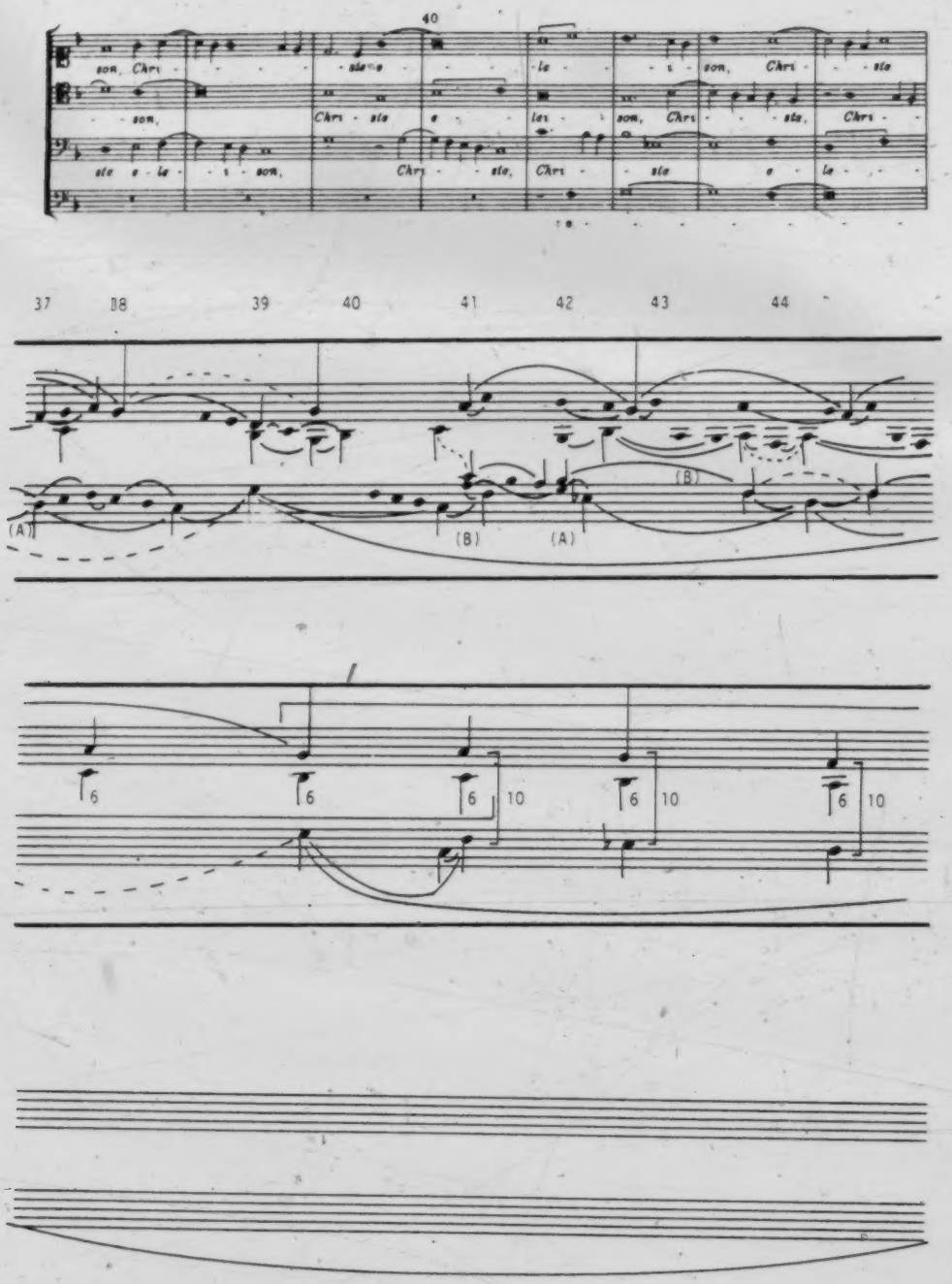

15
e - le - i - son, e - le - i - son.
Ky - ri - e e - le - i - son, e - le - i - son, e - le - i - son.
le - i - son, e - le - i - son, e - le - i - son.
e - le - i - son, e - le - i - son.

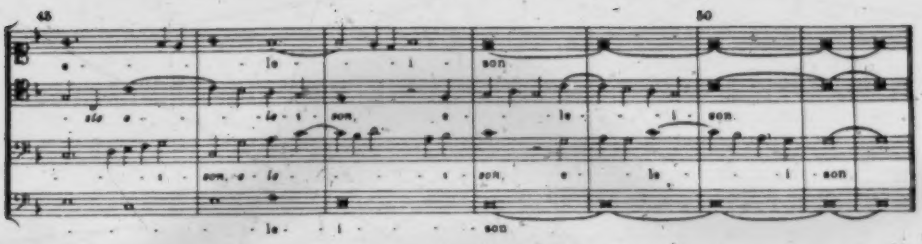

13
14
15
16
17-18
N
P


20
25
Chri - ste e - le - i - son, Chri - ste
Chri - - - - - - ste e - - - lei - son, Chri -
Chri - - - - ste, Chri - - - ste e - - - le - i - son,
Chri - - - ste e - - lei - - - son,

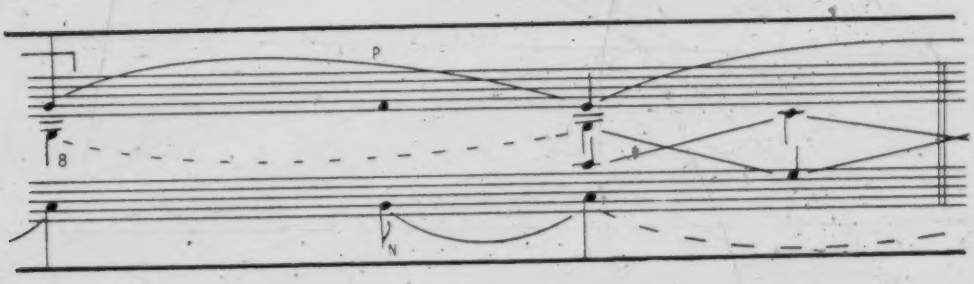

19
21
23
25
26
27
28

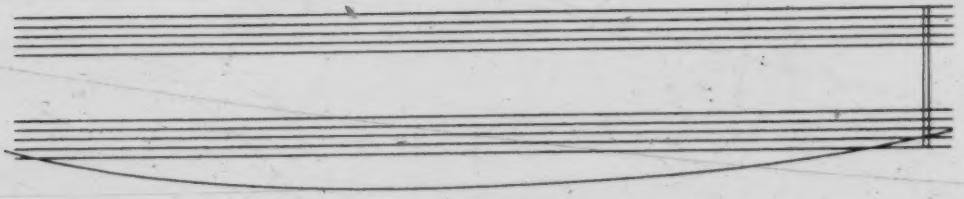

30
35
e - le - i - son, Chri - ste, Chri - ste e - le - i -
- ste e - lei -
Chri - ste, Chri - ste e - le - i - son, Chri -
Chri - ste e - lei - son,
29 30 31 32 33 34 35 36
(A)
(A)
(B)
N
P
6
N

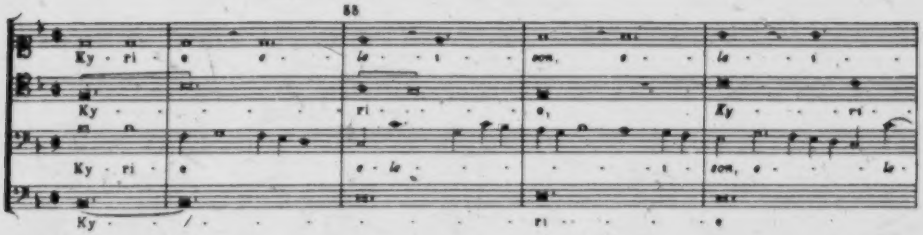

40
son, Chri - - - - ste e - - - le - - i - son, Chri - - ste
- son, Chri - ste e - lei - son, Chri - - ste, Chri -
ste e - le - i - son, Chri - - ste, Chri - - ste e - le - -
37 38 39 40 41 42 43 44
(A)
(B)
(A)
(B)
6
6
6
10
6
10
6
10

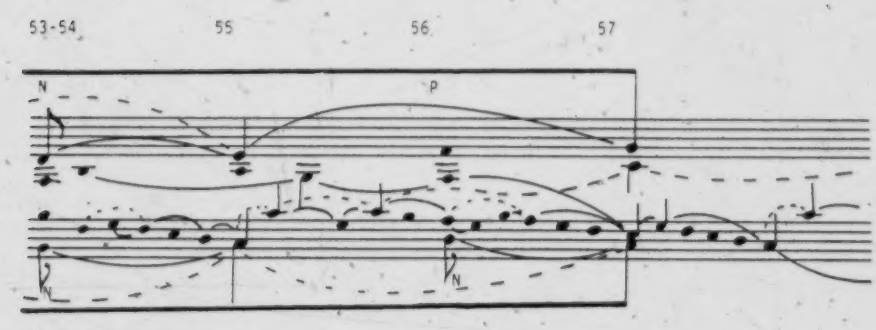

45
50
e - - - le - - - i - son
- sto e - - - le - i - son, e - - le - - i - son.
- - - i - son, e - le - - - i - son, e - le - - i - son
- - - - - le - i - - - - son

45
46
47
48
49
50
51-52
N
P
(B)
(A)
(B)
(A)
(A)
(B)
(A)
(B)
N
N
N

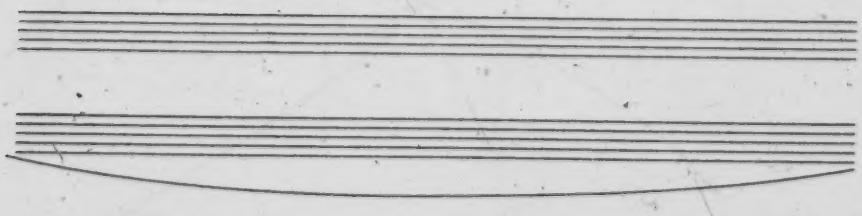

P
8
N

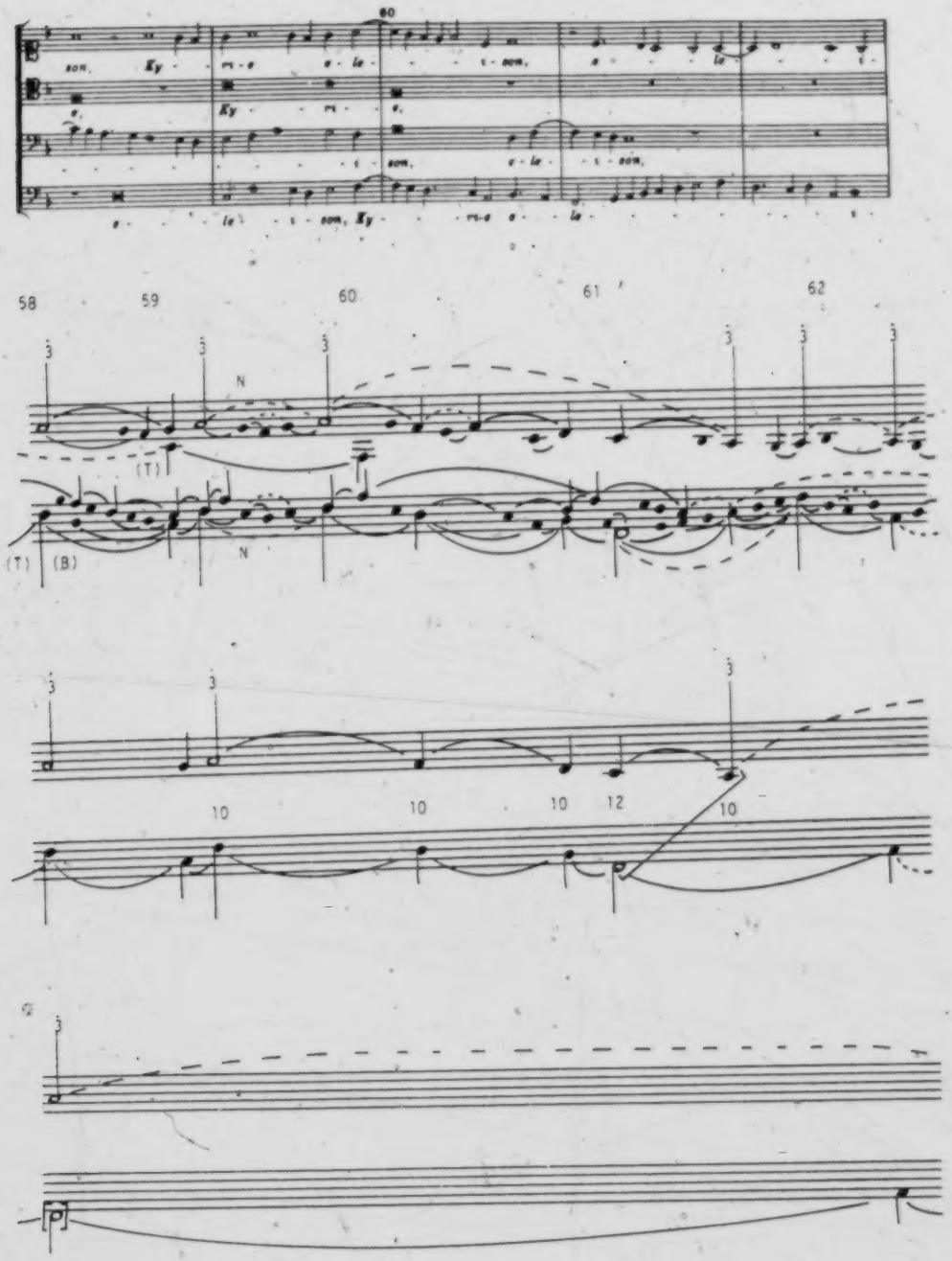


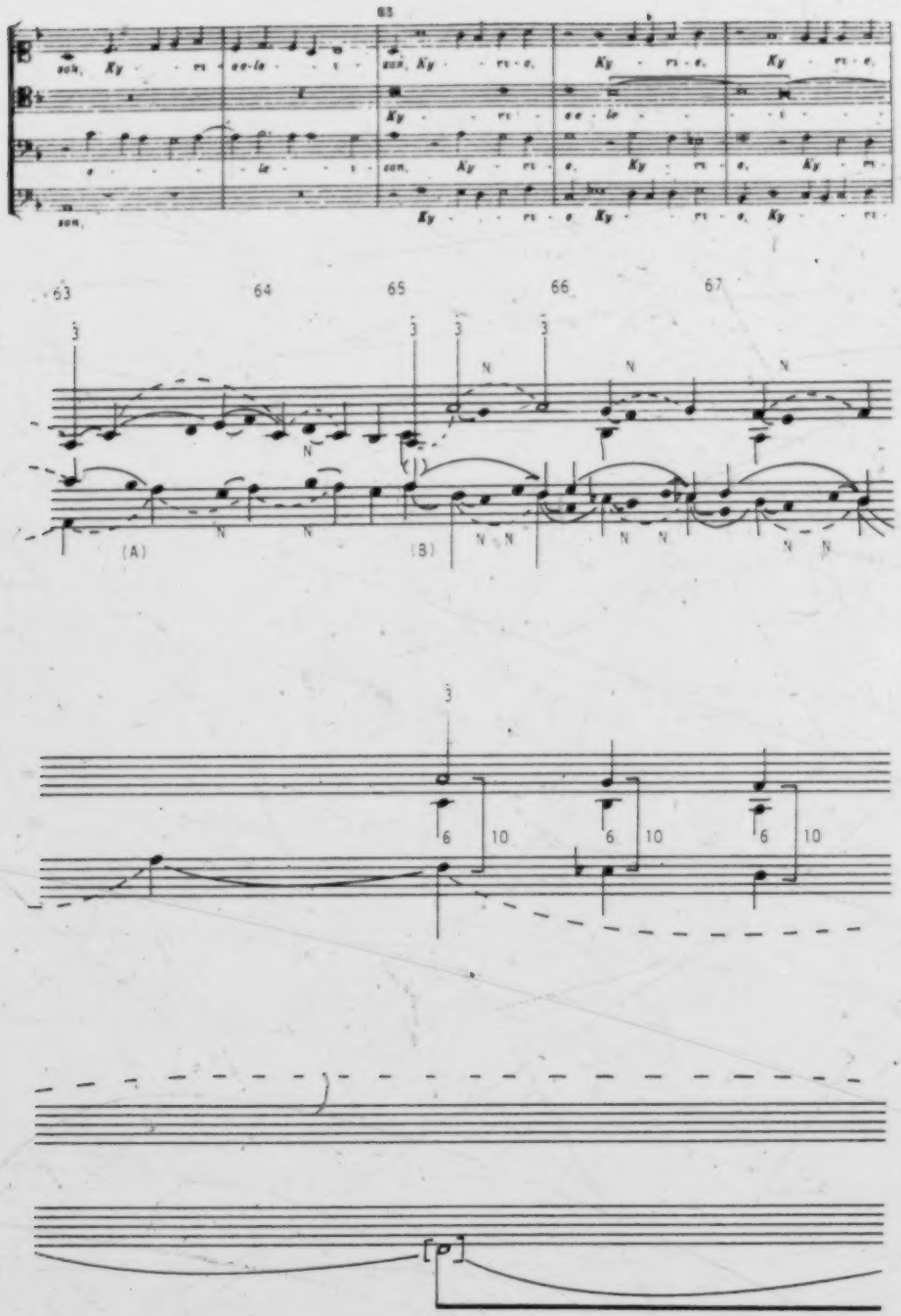

55
Ky - ri - e e - le - i - son, e - le - i -
Ky - ri - e, Ky - ri -
Ky - ri - e e - le - i - son, e - le -
Ky - ri - e

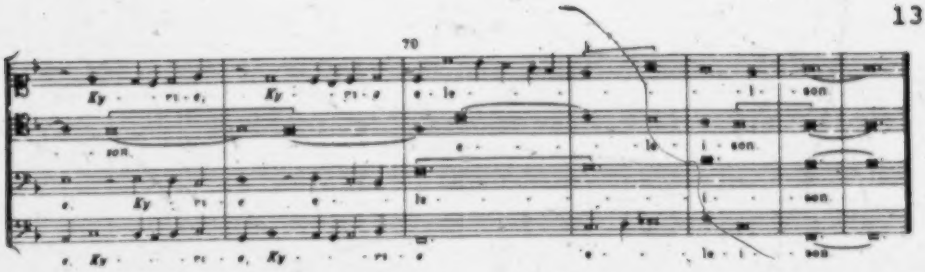

53-54
55
56
57
N
P
N
N

P
N

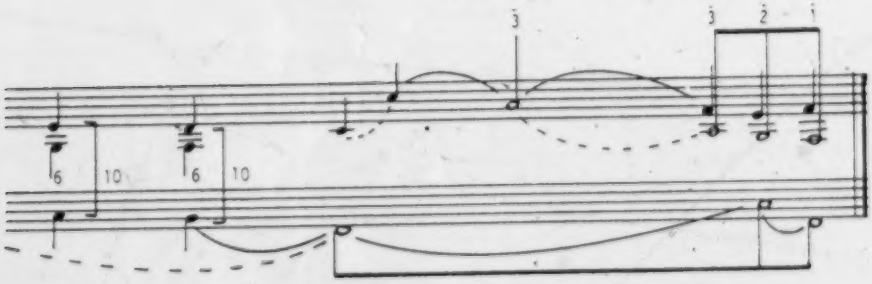


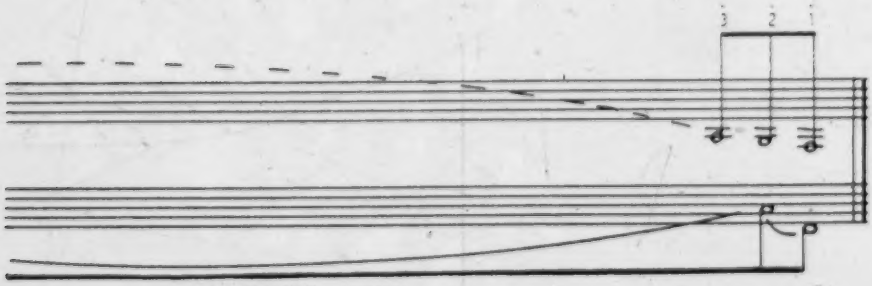

60
58
59
60
61
62
N
(T)
(T)
(B)
N
10
10
10
12
10


63
64
65
66
67
(A)
(B)


70
Ky - ri - e, Ky - ri - e e - le - i - son
son. e - le - i - son.
e. Ky - ri - e e - le - i - son.
e. Ky - ri - e, Ky - ri - e e - le - i - son

68
69
70
71
72
73-74
N
N
N N
N N
3
3 2 1


3
3 2 1
6 10
6 10


3 2 1

treatment and melodic embellishment. The falling fourth is an important melodic gesture in this part of the original melody. Since the bassus begins on c^3 in the Christe, the fourth c^3-g^2 is emphasized, and these notes are the roots of the two prolonged triads, C and G.

The middleground of this section reveals an overlapping motivic connection between tenor and superius in mm.34-45 (indicated by the horizontal square brackets). A chain of parallel sixths between tenor and superius prolongs the C-major triad and $\hat{2}$ (g^4) in these measures. The middleground melody c^4-d^4-c^4-$b\flat^3$-c^4 in the tenor in mm.34-40 prolongs the note c^4; the superius answers this motive with g^4-a^4-g^4-f^4-g^4 in mm.39-45 as it prolongs g^4. Although highly embellished, the superius passage is nonetheless identifiable as an answer at the fifth to the comparatively simple statement in the tenor.

The final Kyrie begins in m.53 with a B♭ triad prolonging the C triad from the end of the Christe. The superius has moved to an inner voice d^4, but reaches back up to $\hat{2}$, which is supported by a C-major triad, in m.57. The C triad then resolves to the central F triad in m.58 (with the bass note f^3 provided by the tenor), and the superius returns to the $\hat{3}$ *Kopfton*. The remainder of the movement is a prolongation of the central F-major sonority with a structural $\hat{3}$-$\hat{2}$-$\hat{1}$ descent at the end.

The harmonic design of the Kyrie from *Missa L'homme armé sexti toni* resembles that of a tonal ternary form, and is easily described using tonal terminology. The opening Kyrie establishes the F-major tonic and *Kopfton* $\hat{3}$ (a^4), and has a midleground $\hat{3}$-$\hat{2}$-$\hat{1}$ descent at its close. The Christe section establishes the dominant--C major--as a tonal center, and prolongs it and $\hat{2}$ with a G triad; that is, V is prolonged by V/V. The final Kyrie returns to the tonic, re-establishes the structural $\hat{3}$ and contains the structural $\hat{3}$-$\hat{2}$-$\hat{1}$ descent supported by I-V-I in mm.72-73.

The next excerpt (Example 6-3) is also from *Missa L'homme armé sexti toni*, and it has a sequence that is based on a motive heard at the beginning of the mass. It is a short section--the first Agnus Dei--and although the background tonal structure is simple, the complicated middleground allows two interpretations of the sequential passage. The opening measures prolong F major and establish $\hat{3}$ (a^4) over a bass ascent from f^2-f^3. The middleground complications begin with the sequential passage in mm.12-17. The motive on which the outer voices is based--the downward leap of a third followed by the stepwise ascent of a third--is taken from the opening statement of the tenor at the beginning of the mass.[125]

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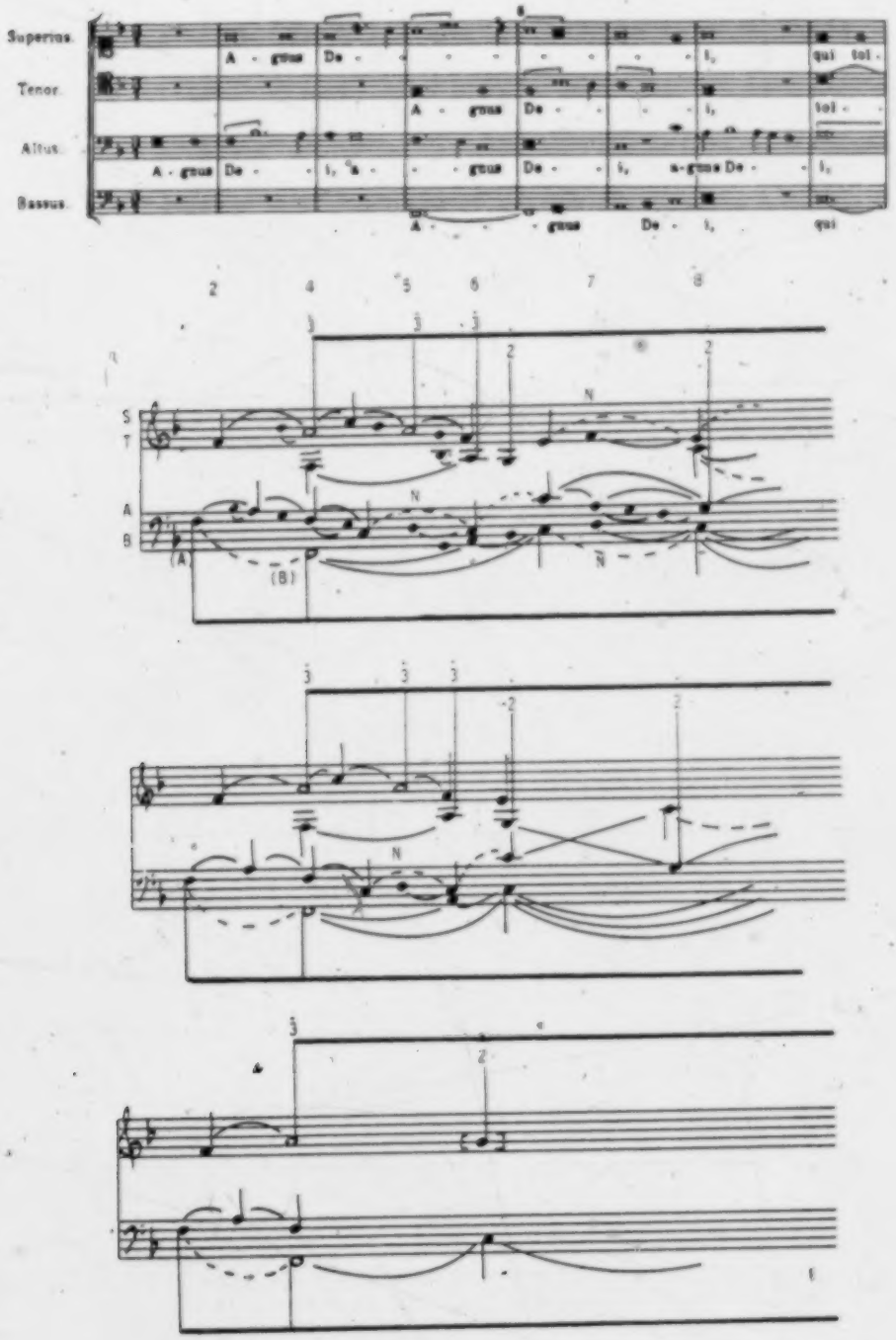
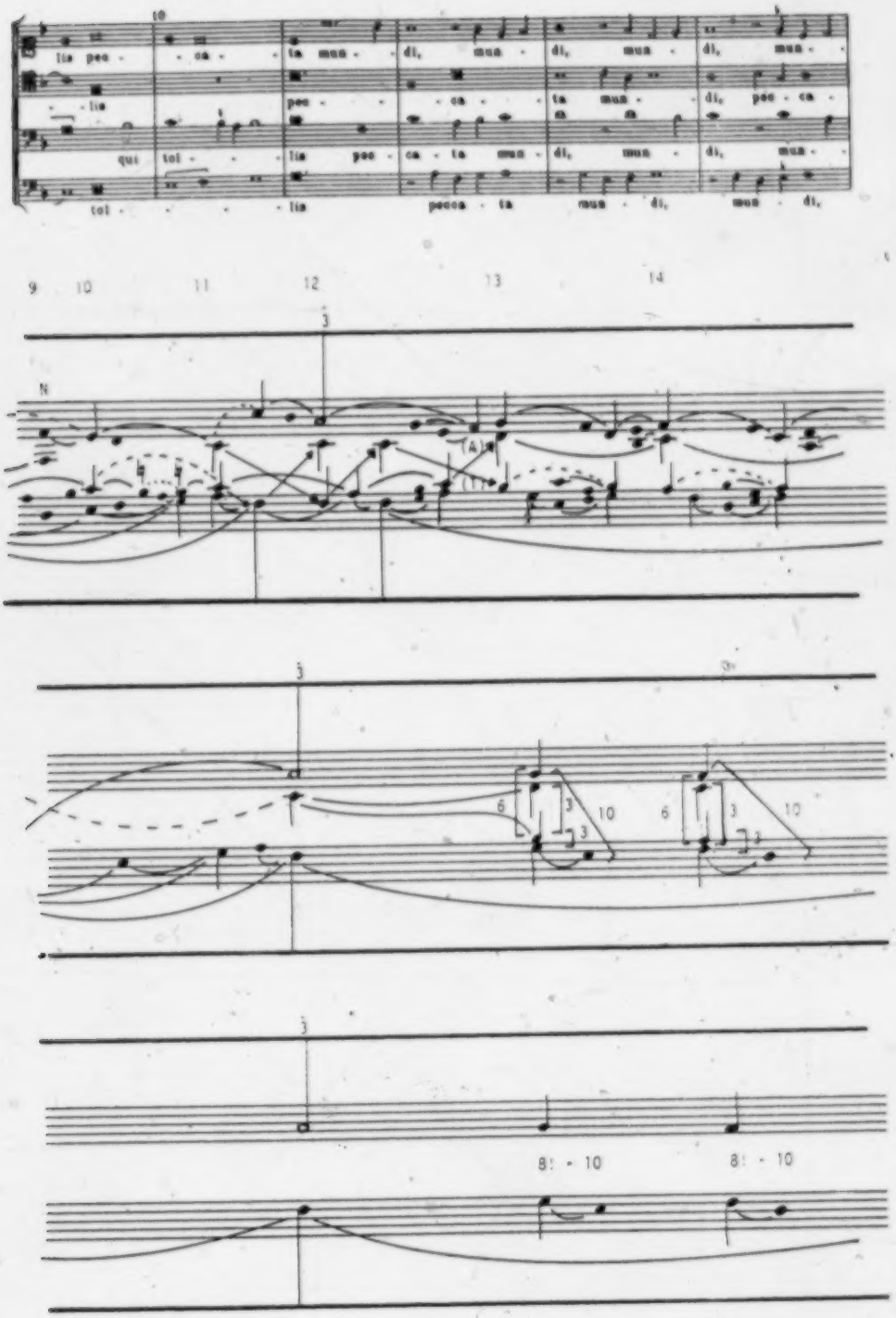
[125] The motive played an important role in the tenor's elaboration of the opening phrase of the original *L'homme armé* melody, and was discussed in more detail in Chapter IV, pp.44-46.

Example 6-3a. *Missa L'homme armé sexti toni*, Agnus Dei mm.1-27 with reductions.




lis pec - ca - ta mun - di, mun - di, mun - di, mun -
- lis pec - ca - ta mun - di, pec - ca -
qui tol - lis pec - ca - ta mun - di, mun - di, mun -
tol - lis pecca - ta mun - di, mun - di,
9 10 11 12 13 14
N
(A)
(T)
8! - 10
8! - 10

15 20

di, mun - di, mun - di, mi - se - re - re no - bis, no -

ta mun - di, mi - se - re - re,

di, mun - di, mi - se - re - re, mi - se - re - re, mi-se-re-re, mi-se-re-

mun - di, mi-se - re - - - - re, mi-se-re-re, mi-se-re-re,

15 16 17 18 19 20

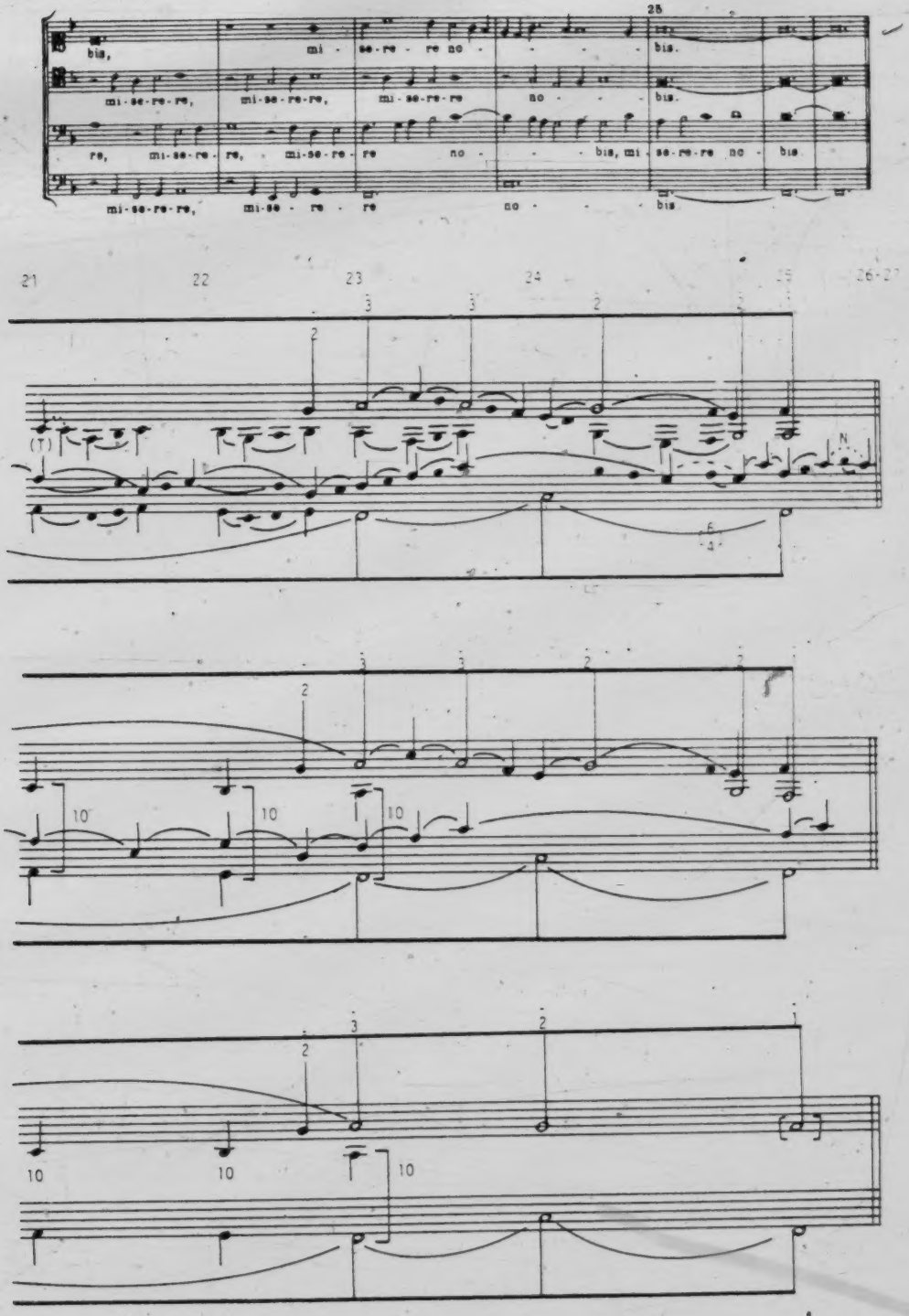
N

(A)

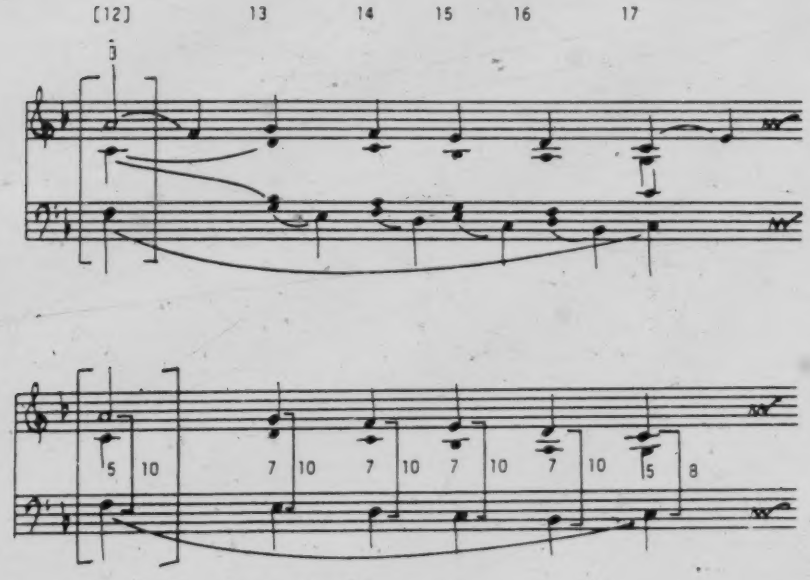
N

6 3 10 6 3 10 10 10

8! - 10 8! - 10 8! — 10 10


25
bis, mi - se-re - re no - - - bis.
mi-se-re-re, mi-se-re-re, mi-se-re-re no - - bis.
re, mi-se-re - re, mi-se-re - re no - - - bis, mi - se-re-re no - bis
mi-se-re-re, mi-se - re - re no - - bis
21 22 23 24 25 26-27
(T)
N

Example 6-3b. Alternate reading for mm.12-17 from Example 6-3a.



The sequence could be explained by the reading provided in either Example 6-3a or Example 6-3b. The middleground of the first graph shows a linear progression of imperfect consonances around the tenor cantus firmus (mm.13-16). The chain of parallel sixths between superius and tenor may be the dyadic progression underlying the sequence, but the intervallic structure shown in the middle graph results in a progression of parallel octaves between the outer voices. In the bassus, the lower note of the third prolongs the upper, and creates an illusory progression of tenths between the outer voices. The second reading, which interprets the upper note of the third as prolonging the lower, gives a progression of real tenths between the bassus and superius, with the sustained altus notes forming

a chain of sevenths above the bassus. Each seventh resolves correctly with subsequent statements of the sequence, but becomes another seventh at the point of resolution.

The complication lies in the interpretation of the bassus sequence: which of the bass notes in the third-motive is prolongational? If the tenor is the voice with which the others must be consonant, the lower note must prolong the upper, but if the tenor does not play an essential role in the harmonic structure of the passage, the upper note of the motive may prolong the lower. When the motive first appears in m.12, the lower note, f^3, is the root of an F-major triad. This would seem to indicate that the lower note in the continuing sequence is more important to the harmonic structure than the upper, and that the reading given in Example 6-3b is therefore correct. However, this note is heard in the context of the tenor's f^3, which appears just before it. The bassus a^3 is the third of the F-major triad, and is thus essential to the sonority. Consequently, the bassus f^3 may be heard as a doubling of the tenor's f^3, and therefore as a prolongation of the a^3. Furthermore, when the motive originally appeared in the opening Kyrie, the lower note was a prolongation of the upper,[128] and the reading in

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[128] Again, the reader is referred to the discussion of the opening measures of *Missa L'homme armé sexti toni*, Chapter IV, pp.44-46.

Example 6-3a is consistent with this interpretation. Other support for the first reading lies in the interpretation of the second part of the sequential passage (mm.19-23). In these measures, the upper note of the bass third-motive undeniably creates parallel tenths with the superius. The outer-voice tenths are heard here because the tenor is not an essential part of the passage: it is silent for the first two measures, and when it joins the sequence in m.21, it simply picks up the superius c^4 and continues from there, allowing the upper voice to return to its original register.

The best explanation for the passage from mm.12-17 is a compromise between the two views. If one accepts the primacy of the tenor in a cantus firmus work, the tenor's essential role in the harmonic structure of the first half of the sequence must be recognized. The middleground parallel fifths between the tenor and the lower note of the third in the bassus are therefore unacceptable.[127] However, the middleground parallel octaves between bassus and superius in Example 6-3a (which are acceptable because

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[127] A situation similar to this has already arisen in the discussion of the Agnus Dei from *Missa L'homme armé super voces musicales* (Example 5-9). In that excerpt, the bassus and altus are in parallel tenths and sixths respectively with the tenor. The result is a passage of middleground parallel perfect fifths between bassus and altus, and octaves between bassus and superius. These parallel intervals are acceptable because of the intervallic agreement of superius, altus and bassus with the tenor.

those two voices are consonant with the tenor) are weakened by the illusory parallel tenths between the superius and the lower third of the motive. Thus, a dichotomy is evident in the sequence. On the one hand, the superius, altus and bassus must be consonant with the tenor cantus firmus. On the other hand, the conformity creates a deeper-level problem between the outer voices; this problem is solved by the creation of motivically-generated illusory parallel tenths, which then become real in the second part of the sequence.

The simplicity of the background tonal structure for the opening Agnus Dei is in stark contrast to the middle-ground complexities. An F-major triad is established in the opening measures; the first half of the sequence then begins with a descent from f^3 to c^3 in the bass. The C-major triad reached in m.17 is briefly prolonged by a neighbouring D-minor triad before it is restated in m.19. The bass descent then continues, further prolonging the C triad from m.17, and ending on f^2 with the cadence in m.23. At this cadence, the superius resumes on $\hat{3}$ before continuing to the close of the section, where $\hat{2}$ is introduced by the superius in the defining triad in m.24, but is transferred to an inner voice (the tenor) before the cadence in m.25.

Example 6-4 reproduces the second section of the Agnus Dei from *Missa L'homme armé sexti toni*, which

contains a problem similar to the one discussed above. The background tonal structure of the section is simple. F major is established as the central sonority supporting $\hat{3}$, and is prolonged in mm.28-35. A C-major triad is then prolonged as a secondary area in mm.36-44. There is a cadence on F in m.44, and this triad is prolonged again until m.62, where the structural defining triad (C) is introduced beneath $\hat{2}$. Prolongation of the C triad is effected by various means, the most significant of which is the extended neighbouring D-minor triad in mm.67-69. The neighbouring figure provides an elaboration of the c-d-c figure presented in the previous section of the Agnus Dei (see discussion of previous example). At the end of the section, the C triad resolves to F through a B♭ triad, which has already been discussed as an interruption of the progression from C-F.[128] In light of the extended c-d-c neighbouring motion, it is clear that the interruption of the B5 cadential progression (C-F) is created by a final foreground statement of the c-d-c neighbour in the altus. The $b\flat^2$ in the bass simply provides consonant support for the interruptive d^4.

The problem in this section is created by the sequence in mm.51-60. The bassus and altus are engaged in an imitative melodic sequence, but do not appear to create

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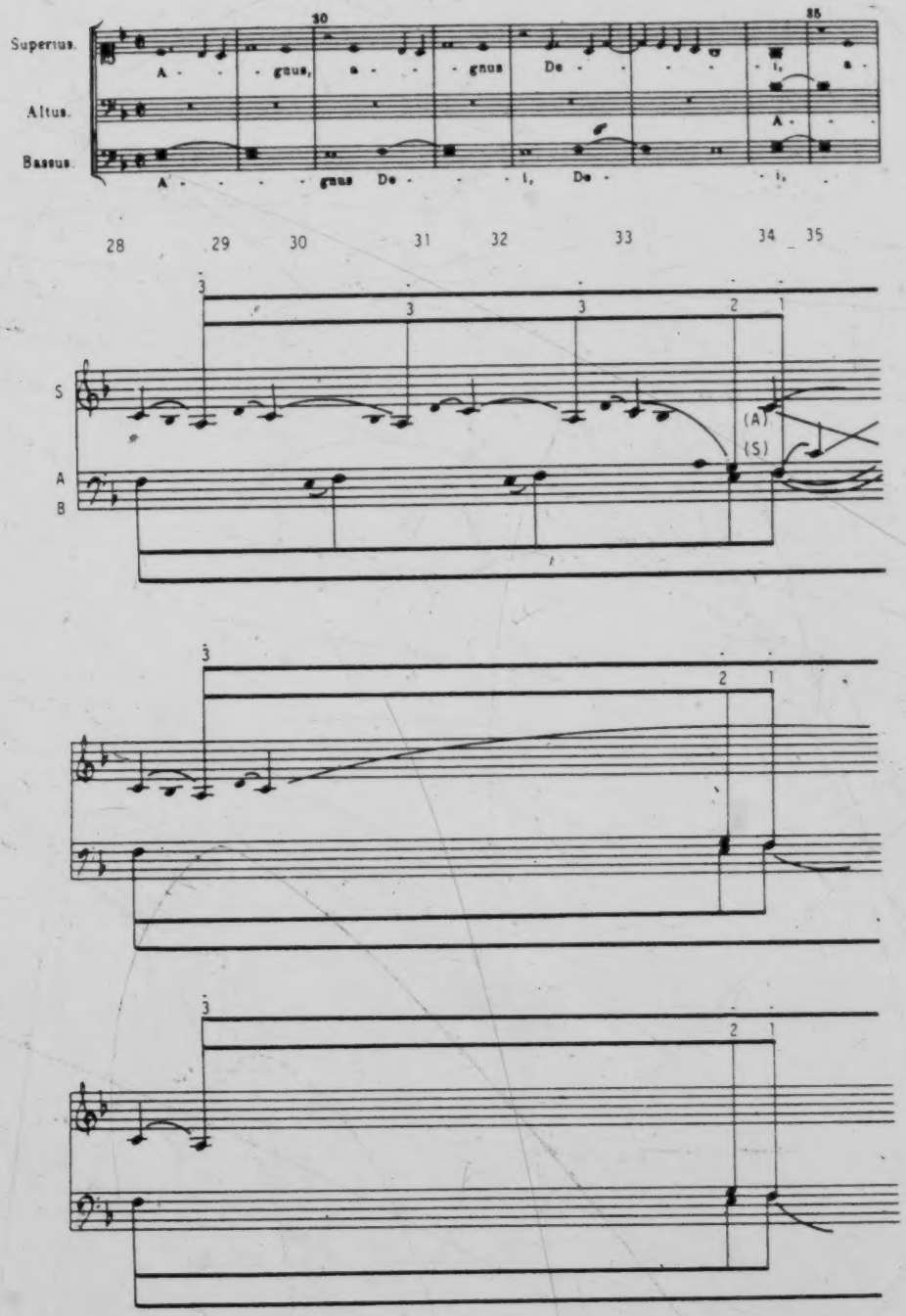
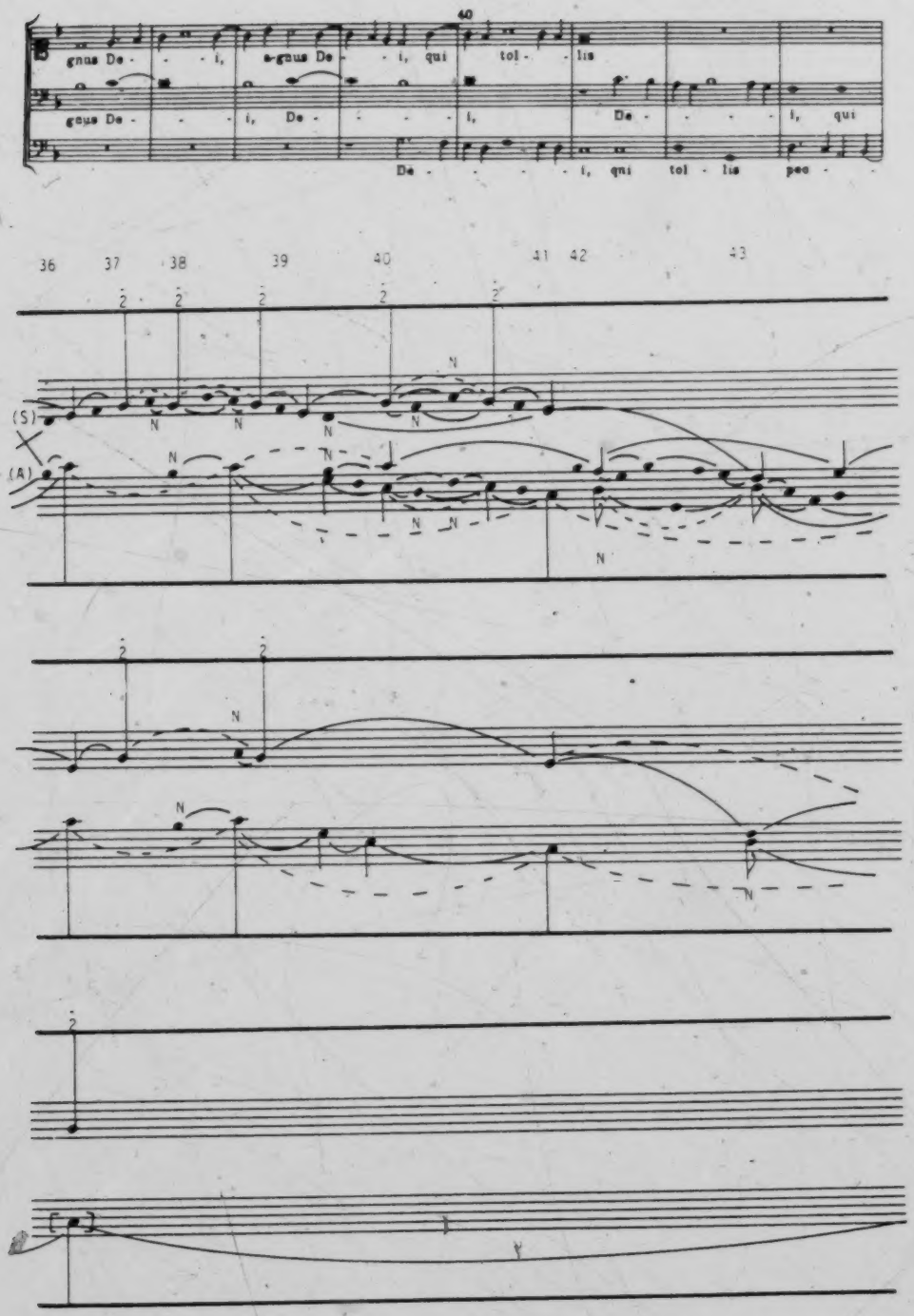
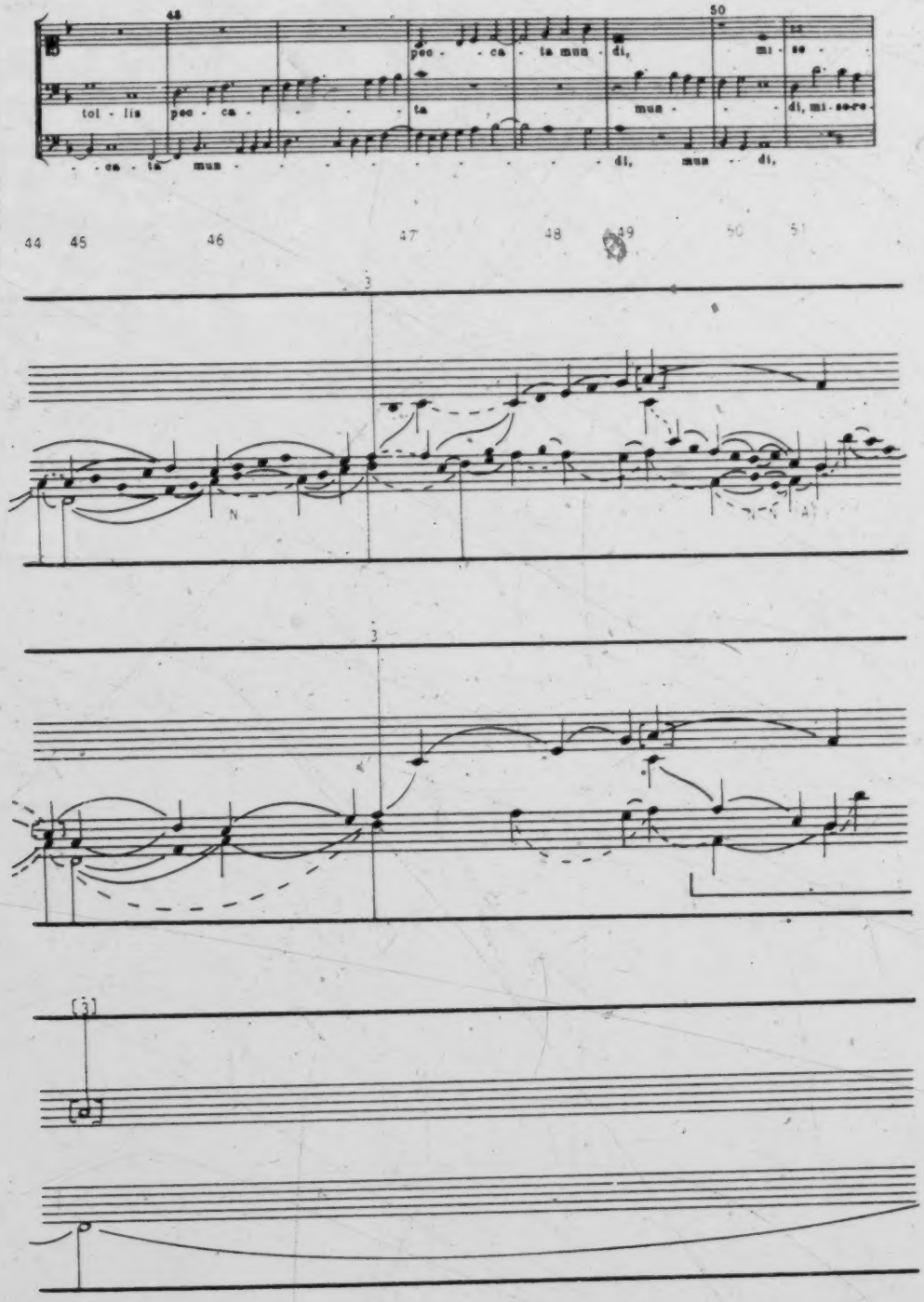
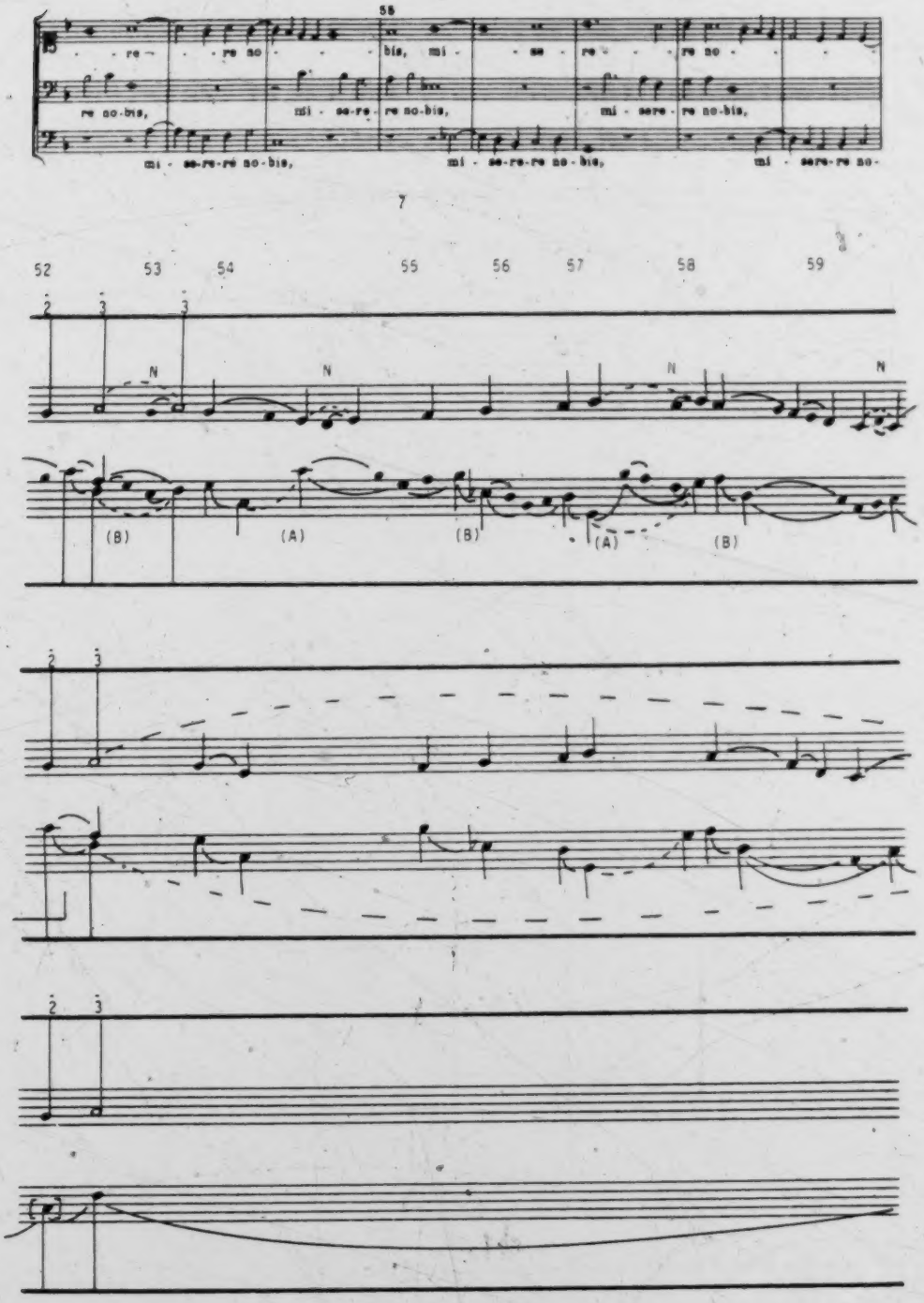
[128] Chapter V, pp.76-77.

Example 6-4a. *Missa L'homme armé sexti toni*, Agnus Dei mm.28-77 with reductions.




40
gnus De - - - i, e-gnus De - - i, qui tol - - lis
gnus De - - - i, De - - - - i, De - - - i, qui
De - - - - i, qui tol - lis peo -
36 37 38 39 40 41 42 43
(S)
(A)


45
50
peo - ca - ta mun - di, mi - se -
tol - lis peo - ca - - - - ta mun - - di, mi - se - re -
- ca - ta mun - - - - - - - - - - - - di, mun - di,
44 45 46 47 48 49 50 51
3
N
3
[3]


55
re no bis, mi se re re no
re no-bis, mi se-re re no-bis, mi sere re no-bis,
mi se-re-re no-bis, mi se-re-re no-bis, mi sere-re no-
7
52 53 54 55 56 57 58 59
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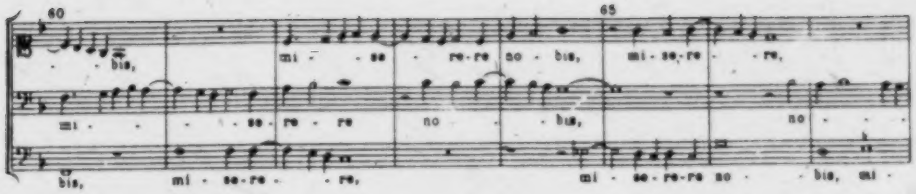
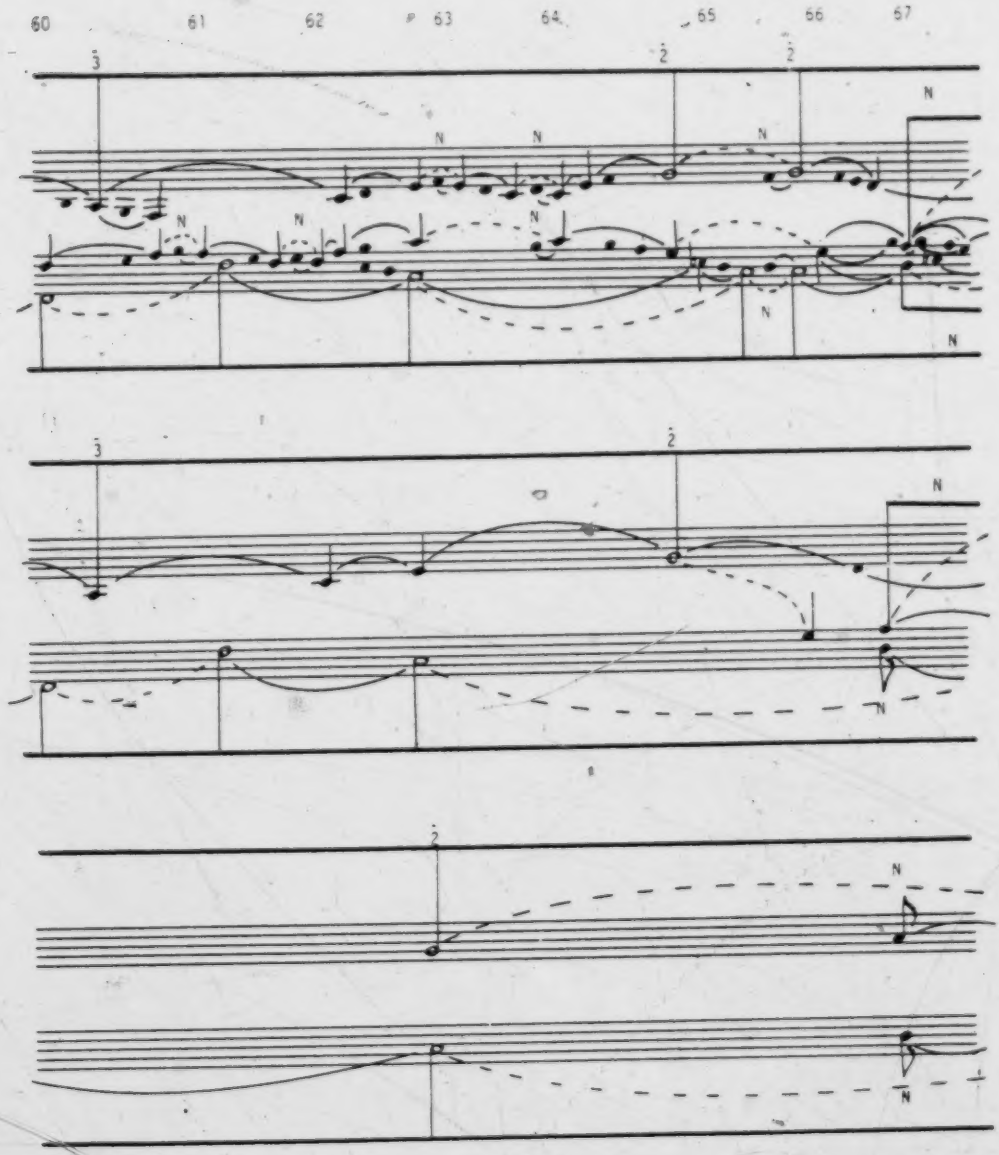

60
65
bis, mi - se - re-re no - bis, mi-se-re - re,
mi - - se - re - re no - bis, no - -
bis, mi - se-re - - re, mi - se-re-re no - bis, mi -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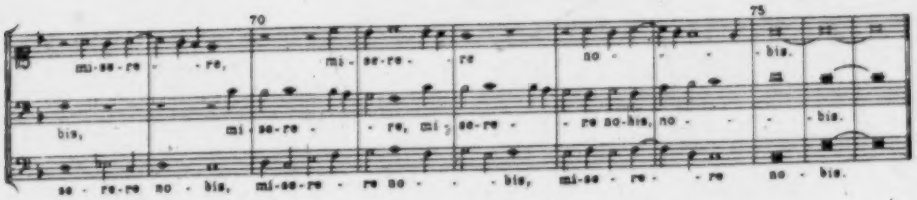
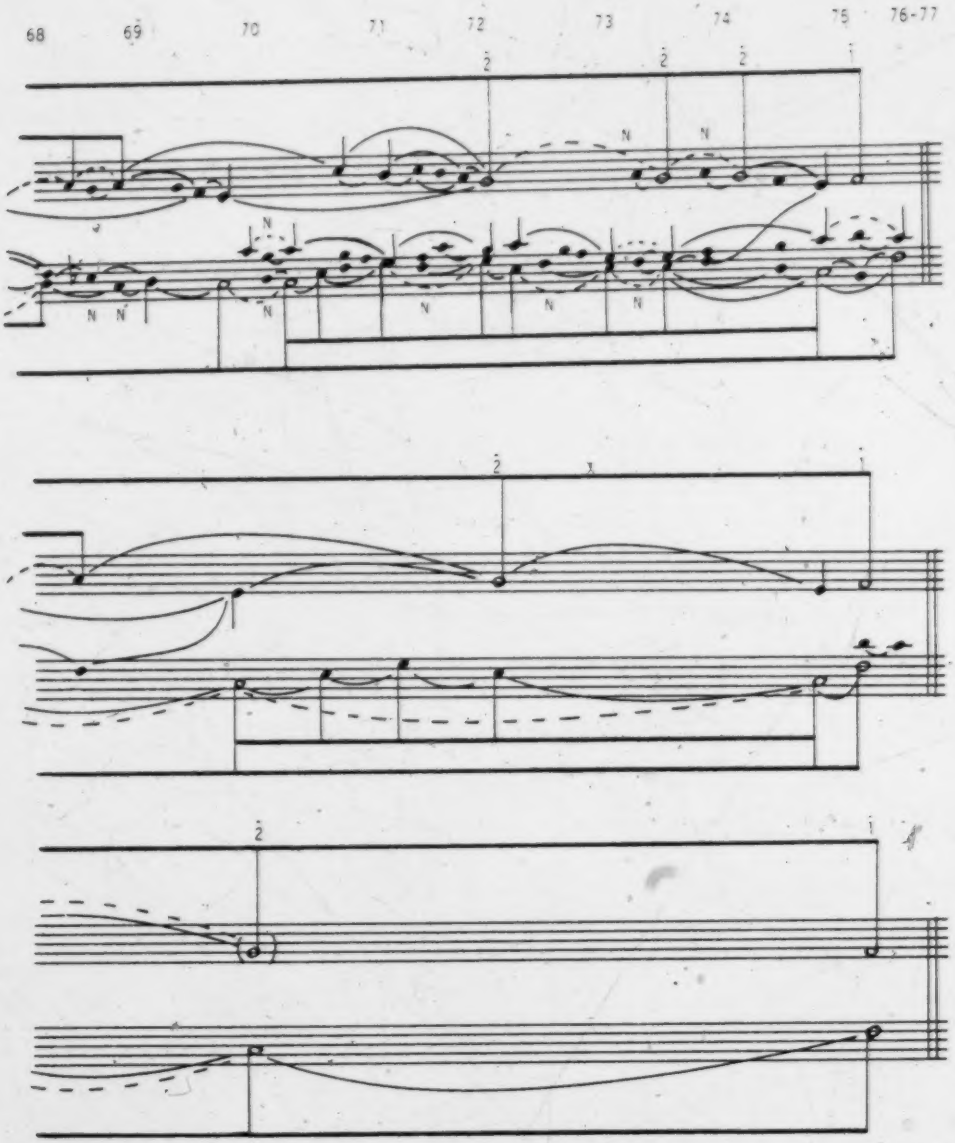

70
75
mi-se-re - re, mi - se-re - re no - - - bis.
bis, mi - se-re - - re, mi - se-re - - re no-bis, no - - - bis.
se - re-re no - bis, mi-se-re - re no - - bis, mi-se - re - - re no - bis.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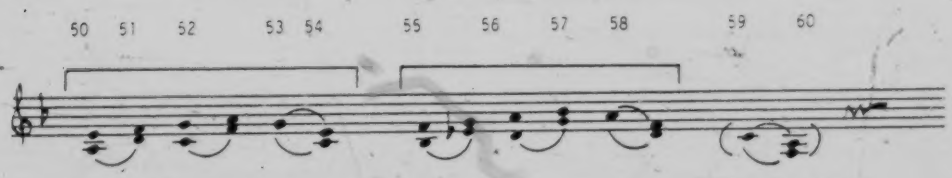
a consistent intervallic or harmonic pattern. The first statement in the altus in m.51 is derived from the c-d-c neighbour motion. The D triad--approached through A--is an incomplete neighbour (indicated in the middle graph by the square bracket underneath) to the C triad. In m.52, the C triad resolves to the central F-major triad with $\hat{3}$ in the upper voice. However, the sequence continues beyond the resolution to F, through an enigmatic harmonic pattern, until it reaches a bassus statement beginning on d^3 (m.59). At this point, the bassus moves from d^3 to c^3, and a resolution to the central F-major triad occurs again, this time with $\hat{3}$ transferred to an inner voice (m.60).

Thus, the opening statement of the sequence re-establishes the structural F-major sonority, and the remainder of the passage simply prolongs that sonority. The sequential statements beginning on a^3 (m.52) and $b\flat^3$ (m.57) have different points of melodic emphasis, and this is shown in the foreground graph. The sequence ends with the same melodic statement with which it began (one octave lower). The harmonic structure of the sequence is clear only if three assumptions are made. First, the superius, although not involved in the melodic sequence, must play a crucial role in the intervallic structure. Second, the bassus and altus must be considered a single voice that has an intervallic relationship with the superius. Third, the $A\frac{6}{5}$ sonority in m.50 must be included. Under these

conditions, a sequential pattern of dyads is revealed (see Example 6-4b). The dyads have been reduced to their simple forms for the sake of clarity.

Example 6-4b. Dyadic sequence in mm.50-60 from Example 6-4a above.



The apparently conflicting points of melodic emphasis at the foreground level in the sequences on a^3 (mm.52-53) and on $b\flat^3$ (mm.57-58) are clarified in Example 6-4b. The deeper-level structure of the passage is the double statement of the dyadic sequence; the foreground melodic sequences on a^3 and $b\flat^3$ occur in the same place within each deeper-level statement, and are therefore consistent. The final statement on d^3 breaks both the foreground and deeper-level sequences.

The first section of the Sanctus from *Missa Fortuna desperata* reveals an interesting background structure (see Example 6-5). Unlike the examples discussed above, this excerpt has no complex sequential passages. One of the unusual aspects of the section is the establishment of scale degree $\hat{5}$ as a *Kopfton* which does not resolve.[129]

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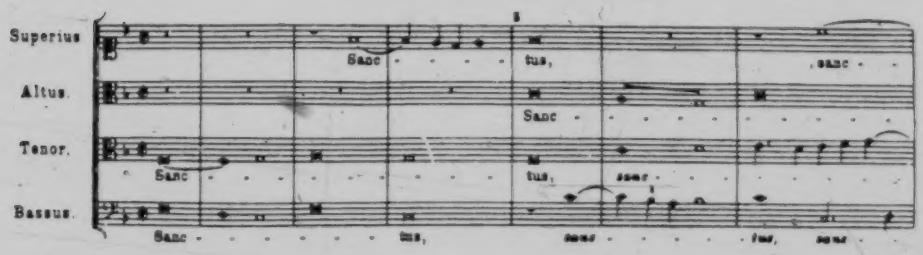
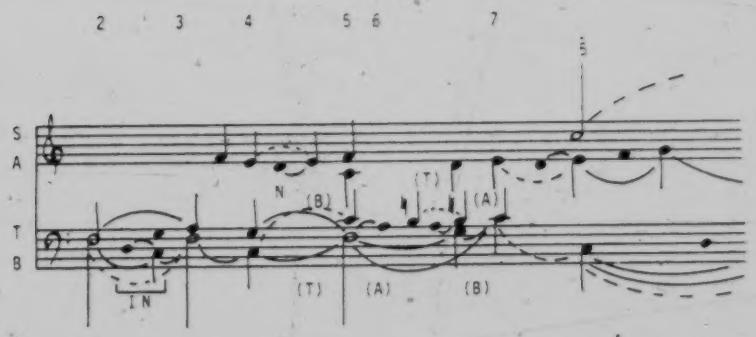
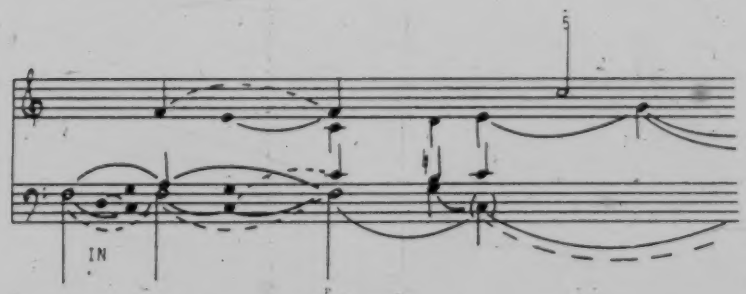
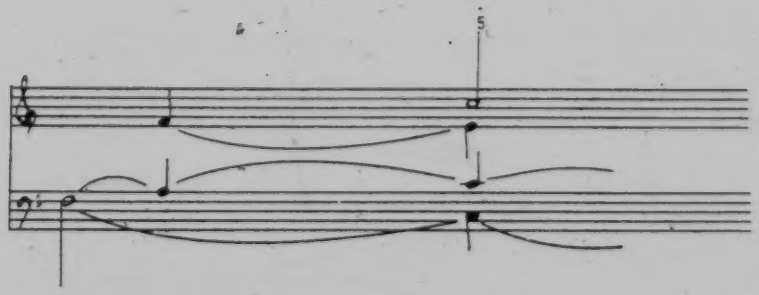
[129] The resolution of $\hat{5}$ through a $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$ descent actually does occur in the subsequent *Pleni sunt coeli* section of the mass.

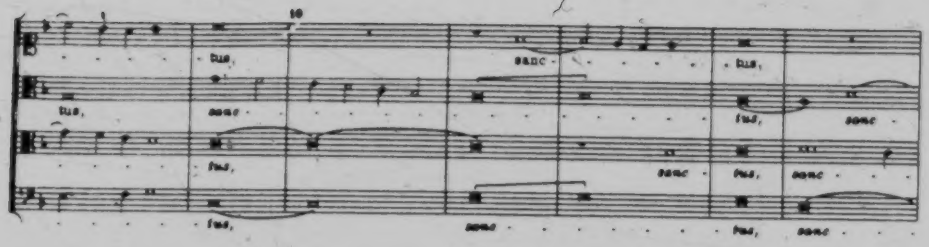
Example 6-5. *Missa Fortuna desperata*, Sanctus mm.1-66 with reductions.







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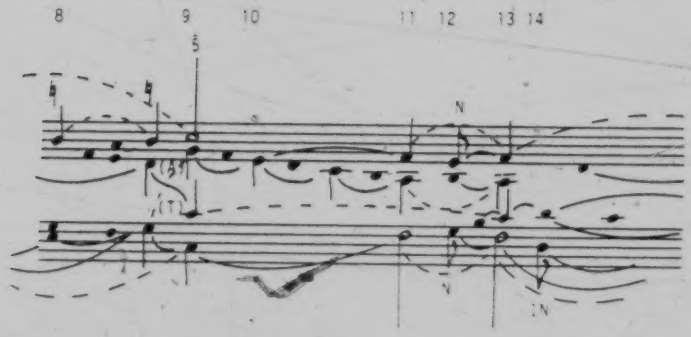
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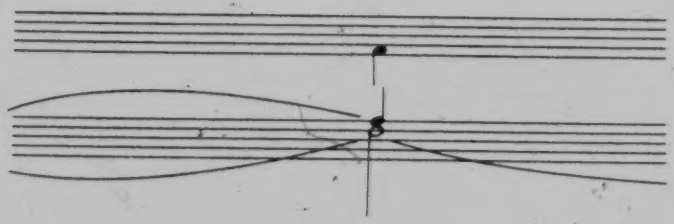

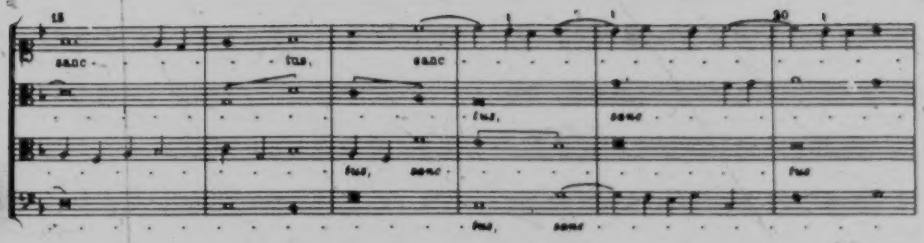

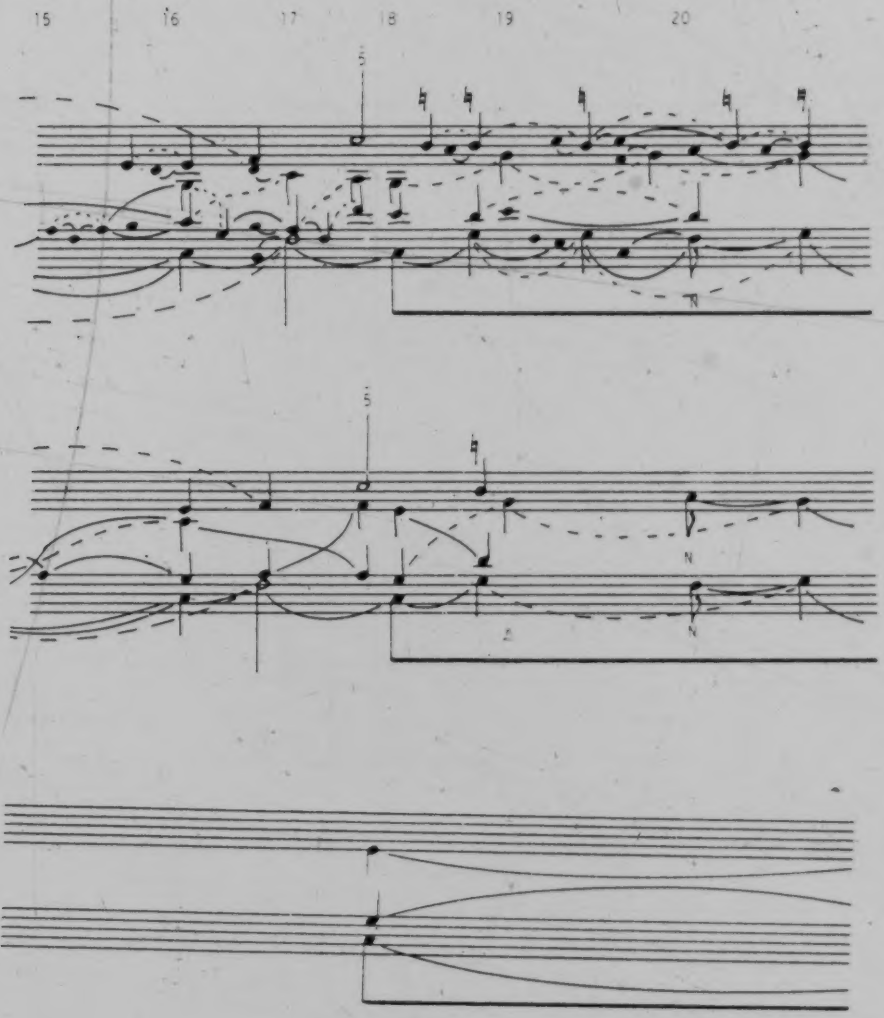
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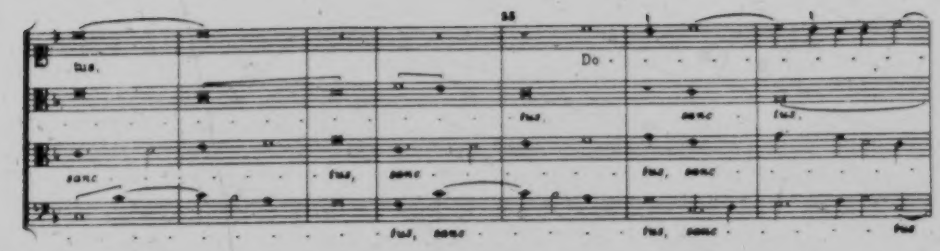
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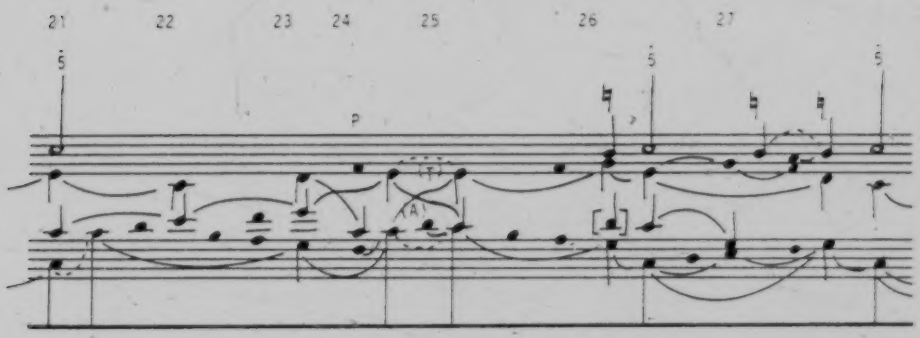
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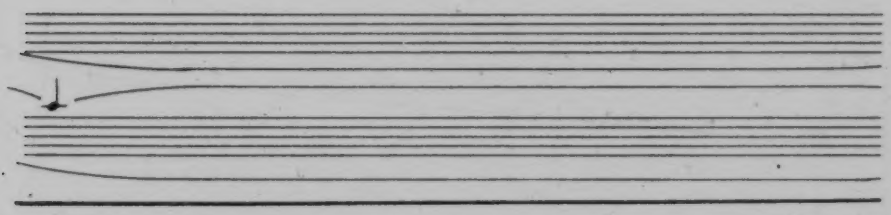
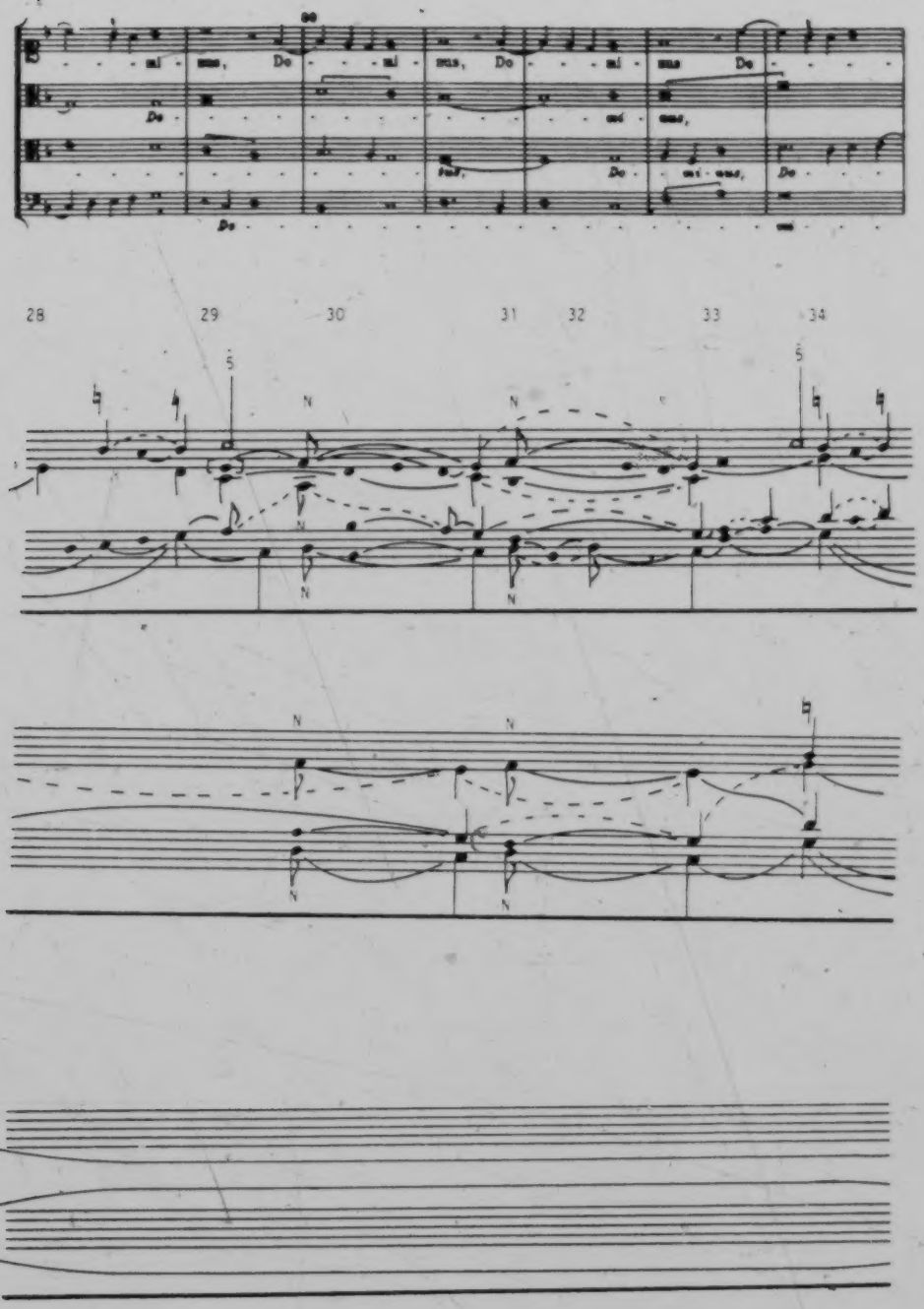
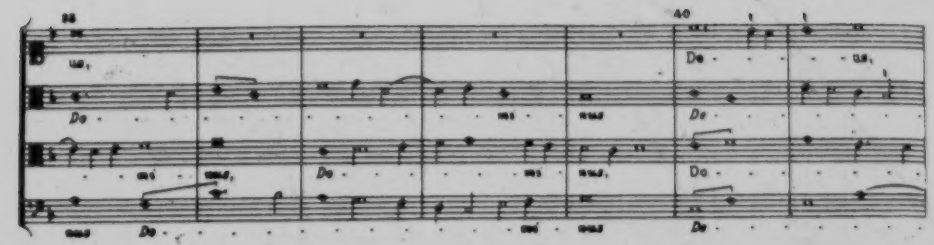



mi - nus, Do - - - mi - nus, Do - - - mi - nus Do
Do - - -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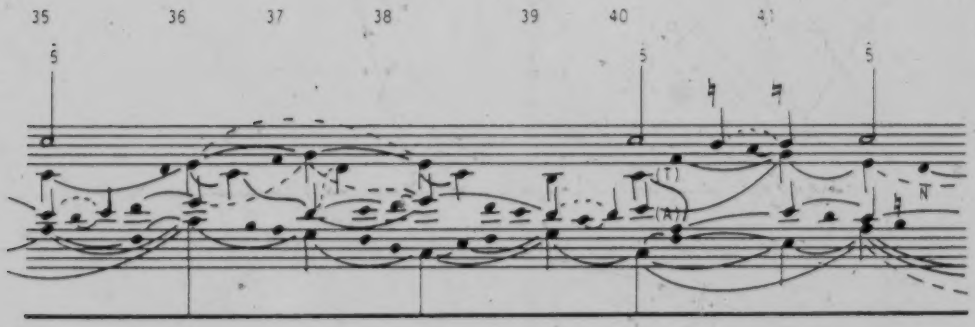
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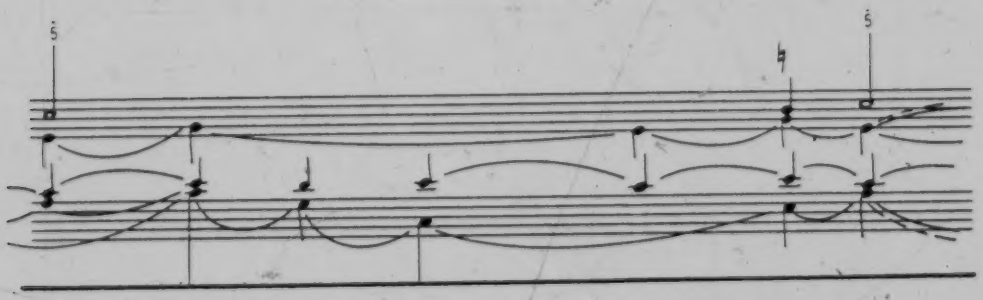
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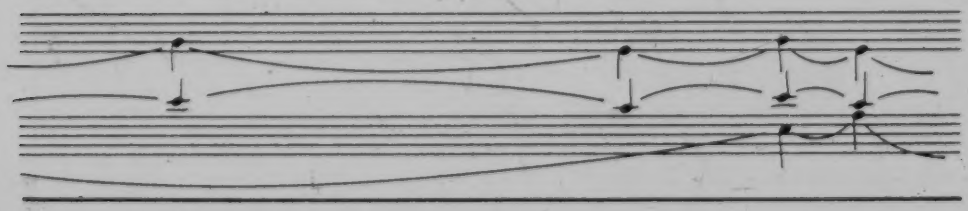

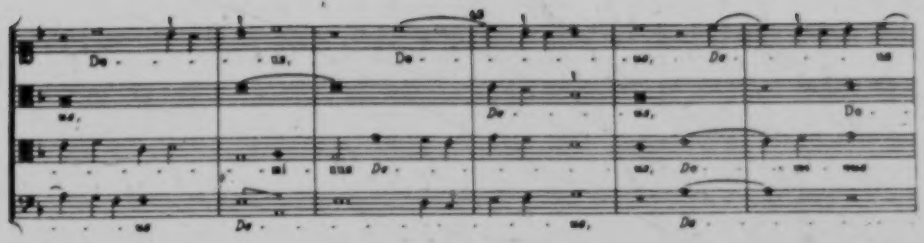
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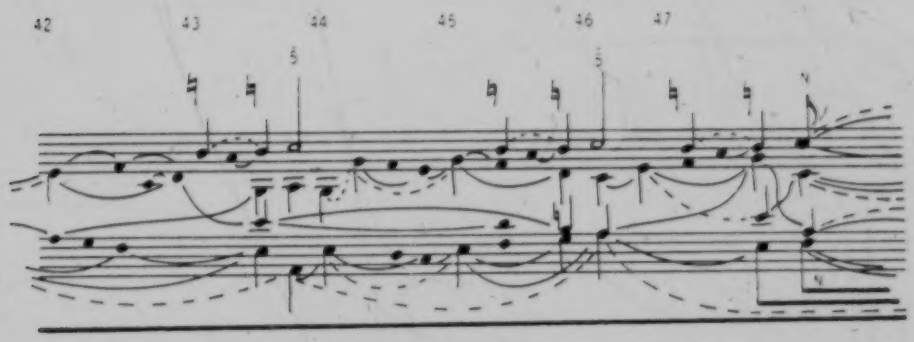
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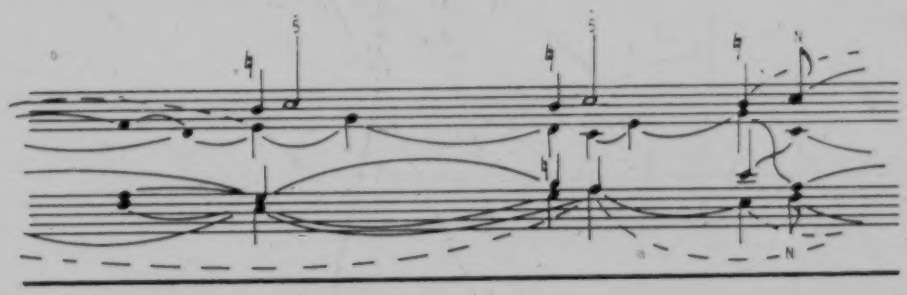

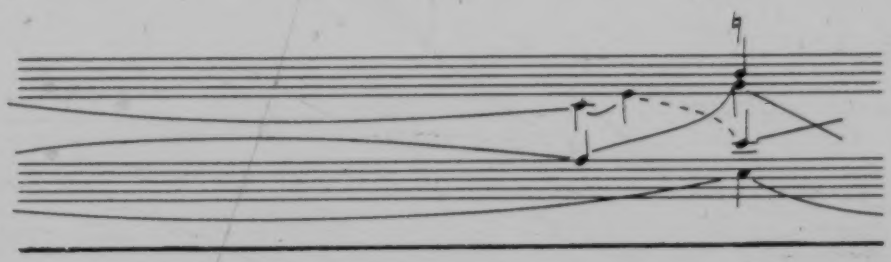

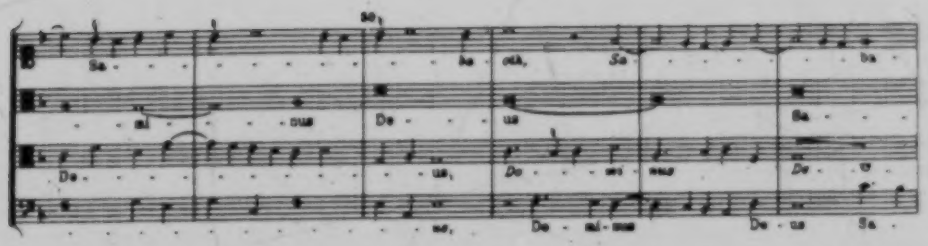
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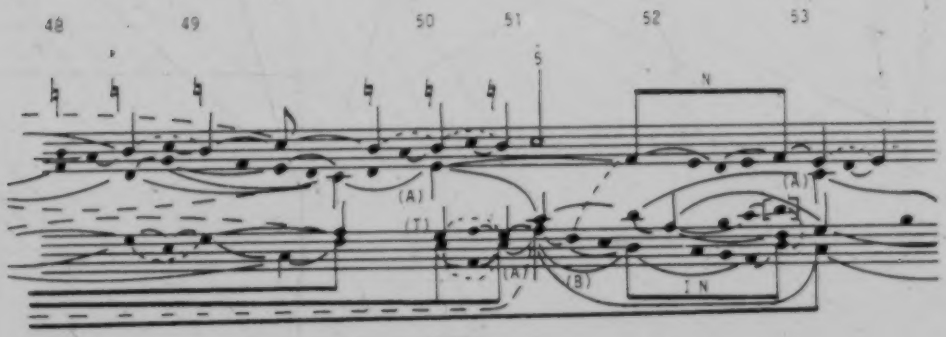
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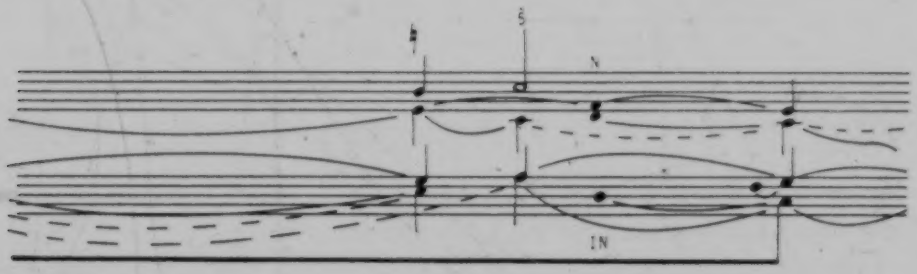
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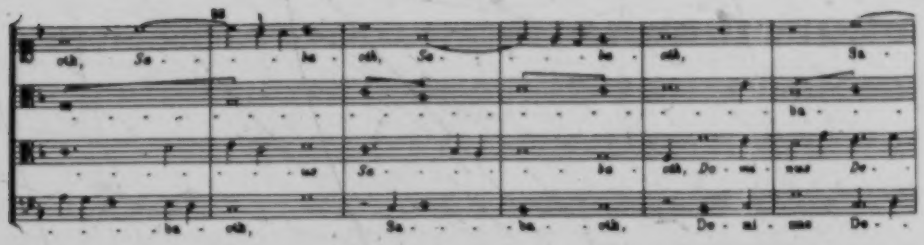
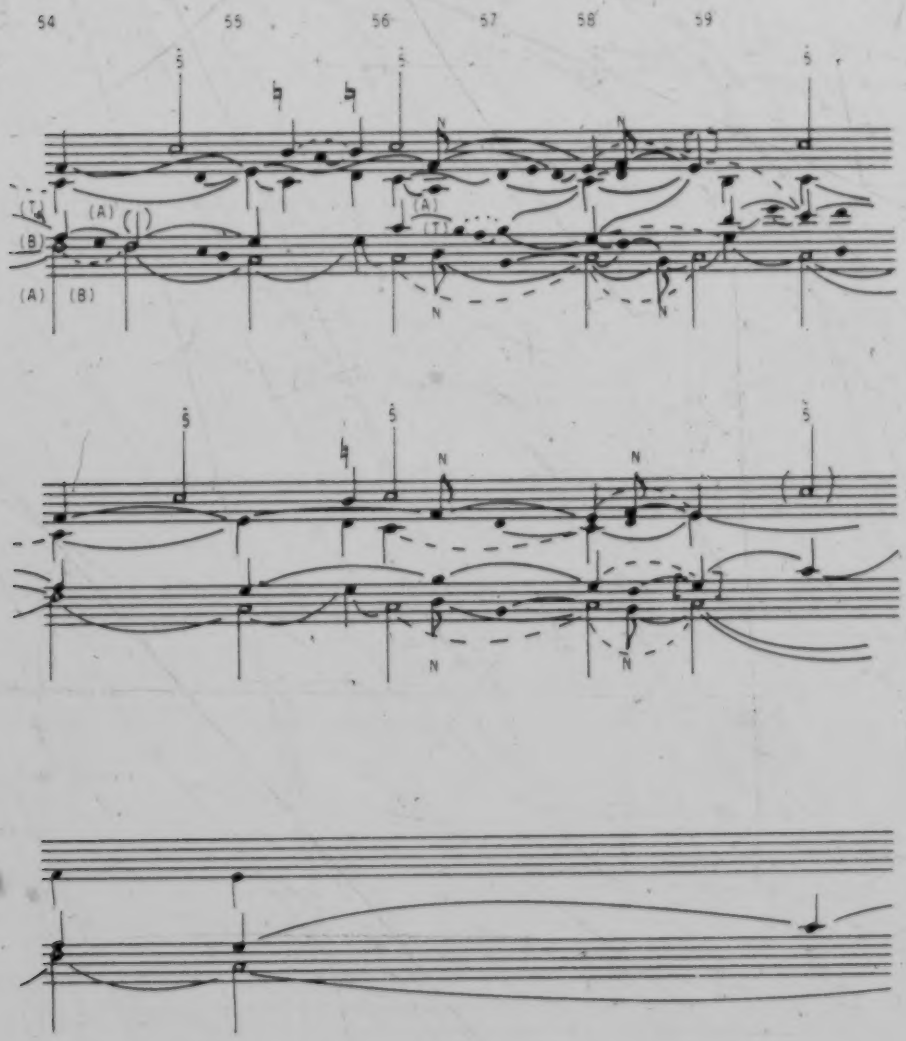

oth, Sa - - - ba - oth, Sa - - - - ba - oth, Sa -
ba - - -
- us Sa - - - - ba - oth, Do - mi - nus Do -
- - - - ba - oth, Sa - - - ba - oth, Do - mi - nus Do -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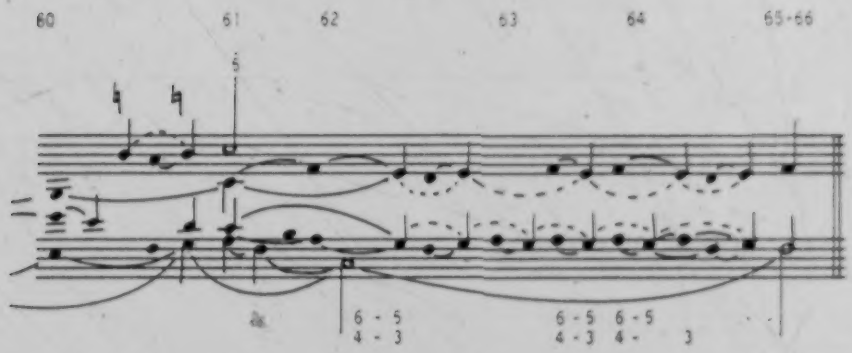
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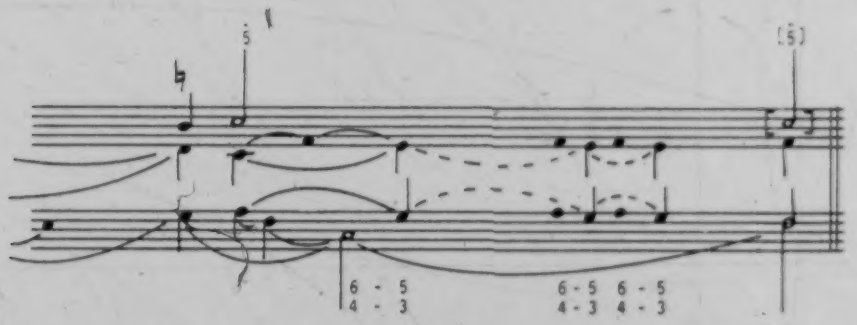
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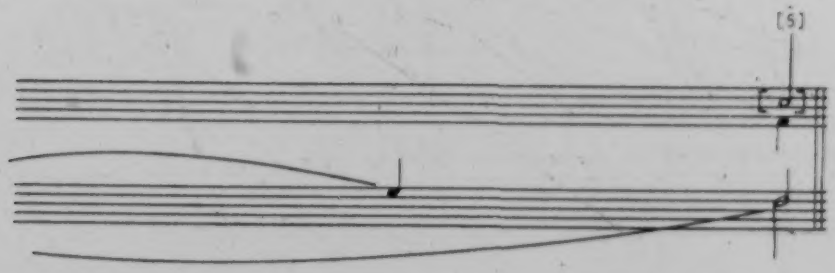
[5]

Also, the cantus firmus melody for this section is in the altus voice, and is derived from the bass line of the original song.[130] One aspect of the section that deserves consideration is the middleground working-out of a surface motive presented in the opening bass gesture--the f^3-d^3-c^3 motive. The d-c neighbouring figure is found in all levels throughout the mass, and this is one example of its use at the middleground level. Measures 11-18 provide an elaboration of the first four measures of the bass line. The C triad reached in m.18 is prolonged until m.54, where it resolves to the central F triad. The d^3 neighbouring gesture is prominent from mm.29-32.

Within the prolonged C triad, a significant deeper-level event occurs: an A triad is established in m.41 and prolonged until m.53, where the C triad returns through D. The central F-major triad reappears in measure 54, and is almost immediately replaced by the structural defining C triad in m.55. The first fifty-four measures of the Sanctus from *Missa Fortuna desperata* thus emphasize the three members of the F-major triad--first f, then c, a, c, and finally f again--by prolonging each as a separate tonal area. A registrally-distinct c^3--the tone common to

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[130] The song is printed at the end of the mass (*Werken van Josquin des Prez. Missen* Vol. I, pp.105-107). Smijers provides two versions under the title *Fortuna desperata* and one under the French title *Fortune esperée*. The cantus firmus in the Sanctus of *Missa Fortuna desperata* most closely follows the bass line for the second version of the song *Fortuna desperata*.

triads built on all three members of the F-major triad--sits above all three tonal areas. Chapter IV of this study contained a discussion of triadic arpeggiation and suggested that some passages in the six works under consideration reveal an awareness of the triad as a distinct entity at the foreground level. As Example 6-5 shows, the same awareness is manifest at a much deeper level.

The final example of deeper-level prolongation and motivic connection between levels is the second Agnus Dei from *Missa Fortuna desperata* (see Example 6-6). Again, the background structure is simple. The central F-major triad is prolonged from the beginning to m.102. A C-major triad is prolonged as a secondary tonal area (mm.66-72) by an extended D neighbour. The structural defining C-major triad is reached in m.103, and is prolonged by an unusual descent from the bassus c^2 in m.103 to the f^2 in m.117. The curious nature of the descent is a direct result of the bassus cantus firmus, which reproduces the altus line from the original song in near perfection,[131] although the notes are differently harmonized. For example, the bass a^2 in mm.109 and 112 is the third of an F-major triad in the song. In this section of the mass, the a^2 is the root of an A triad whose goal is D; both times, however, the a^2

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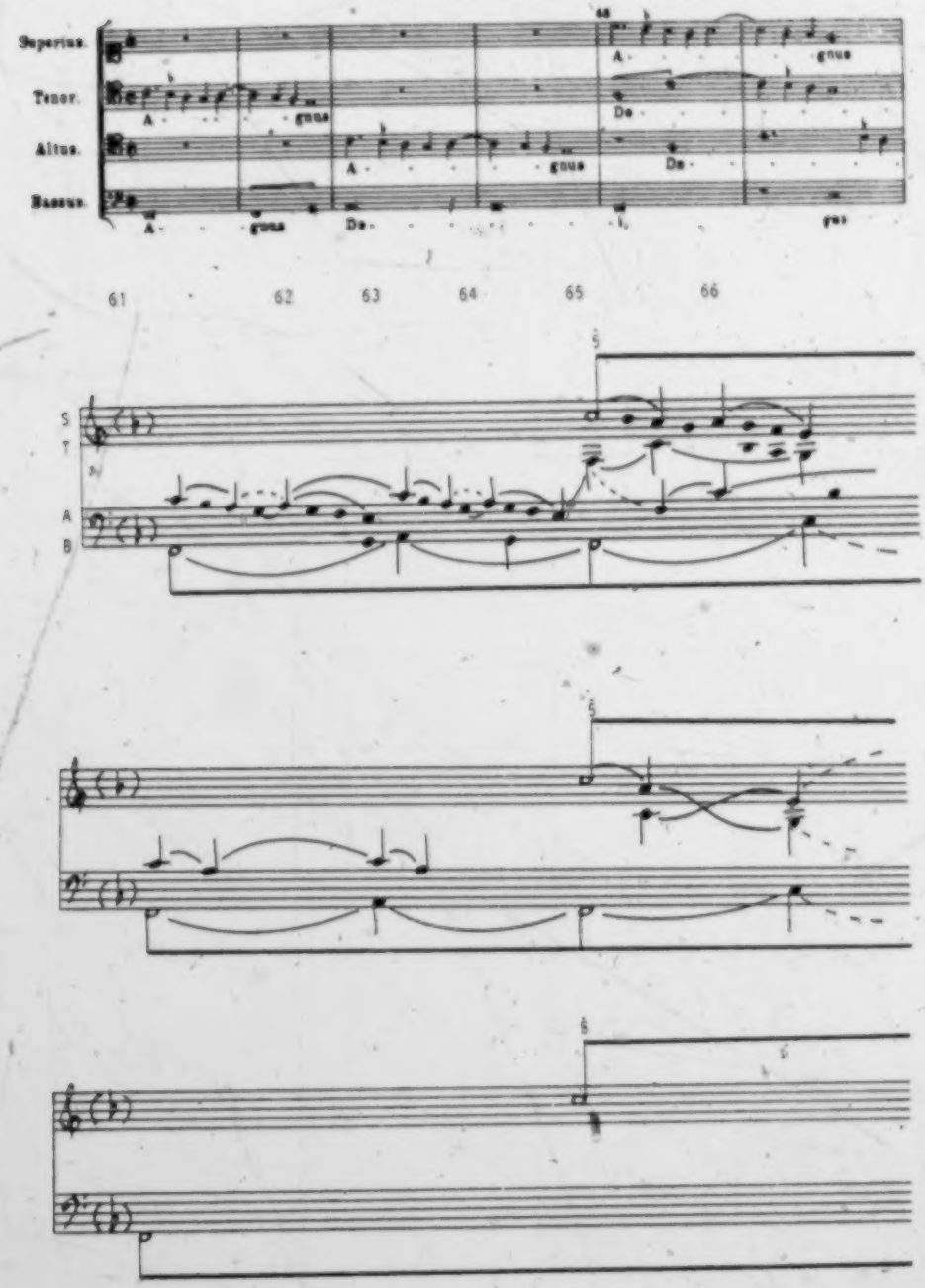
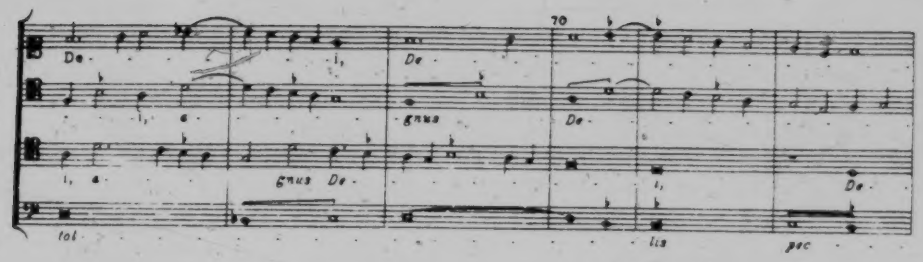
[131] The only change occurs in m.108, where the bassus leaps from d^2 to $b(\flat)^2$. In the original *Fortuna desperata*, there is a passing c between the d and b♭.

Example 6-6a. *Missa Fortuna desperata,* Agnus Dei mm.61-122 with reductions.

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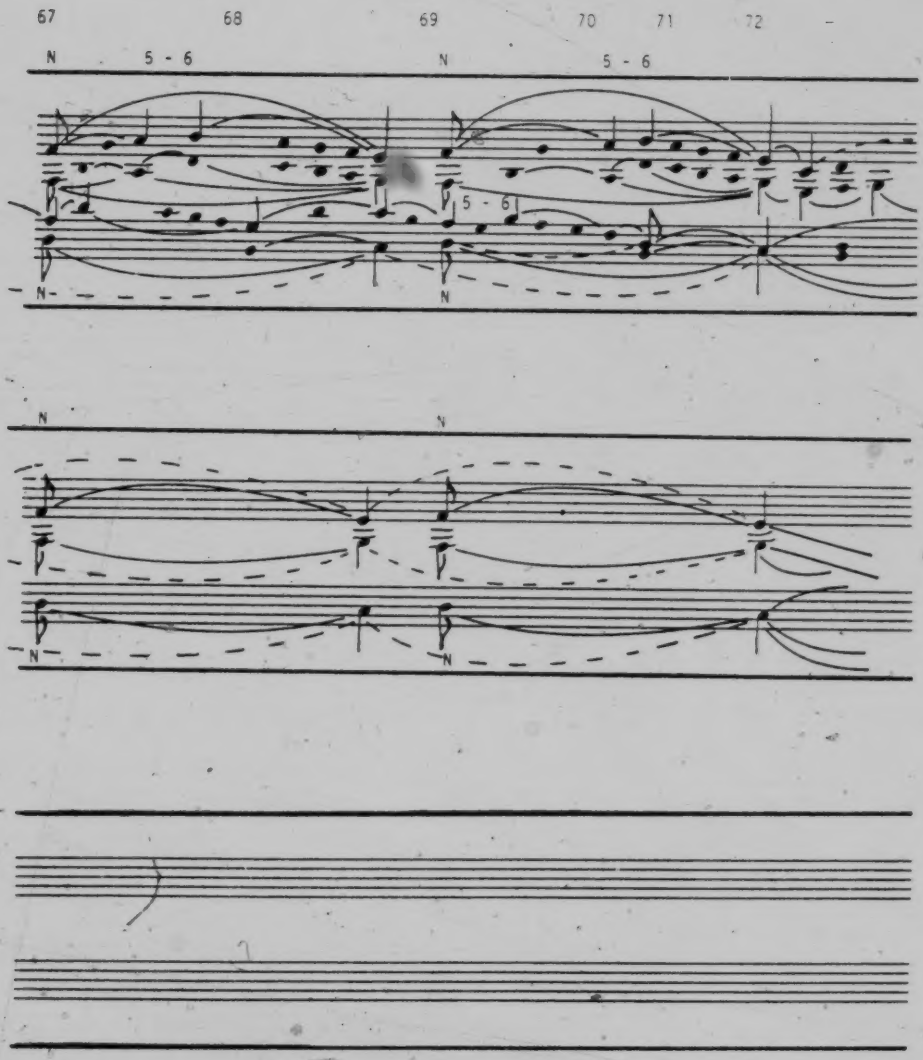
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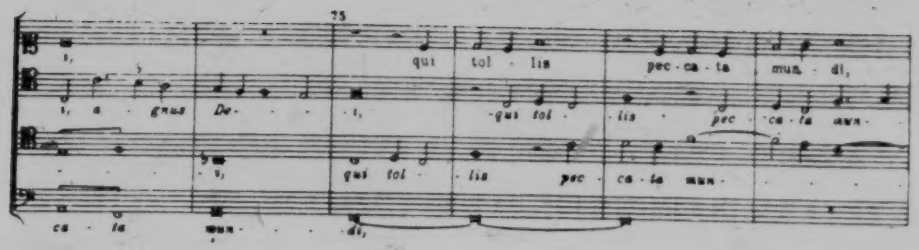
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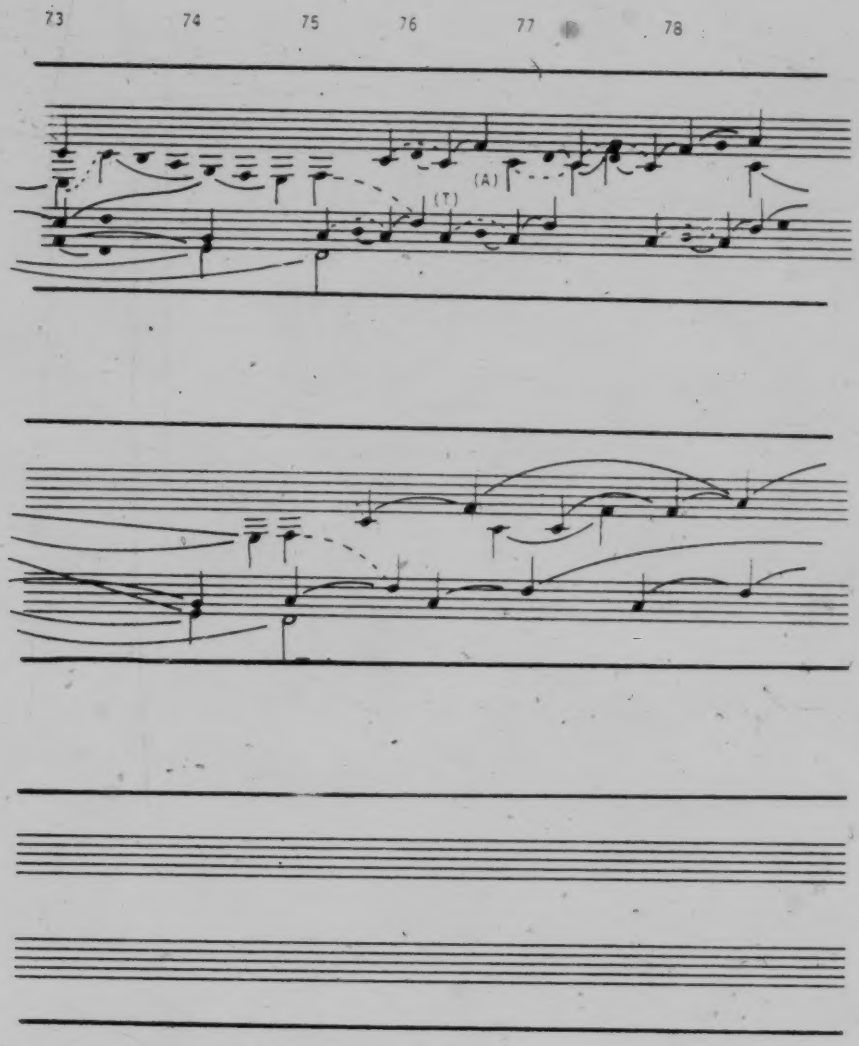
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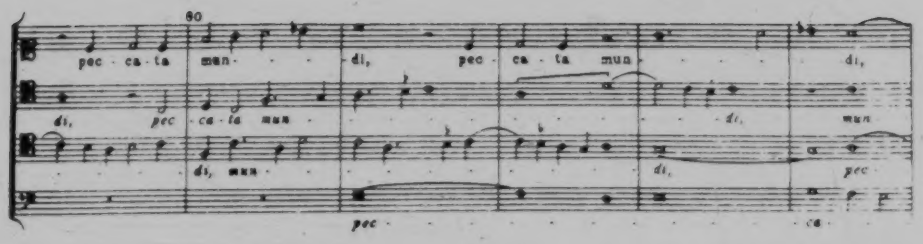
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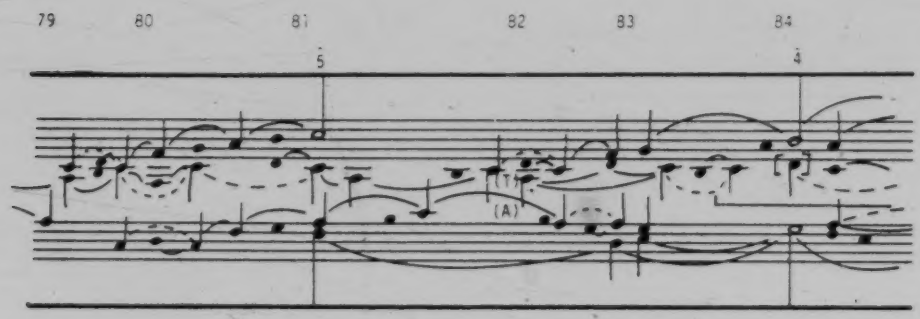
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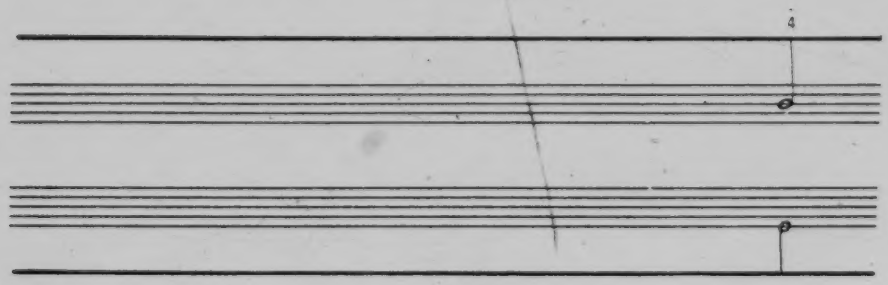
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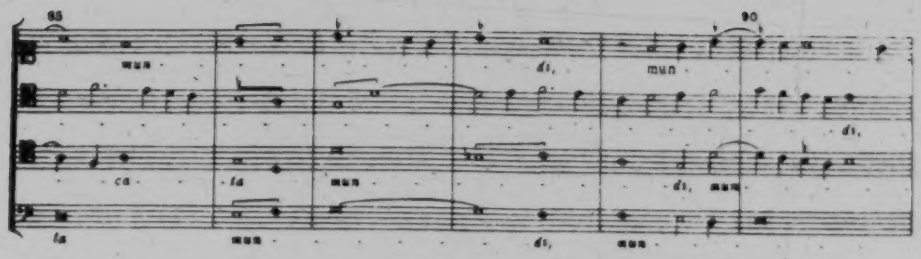
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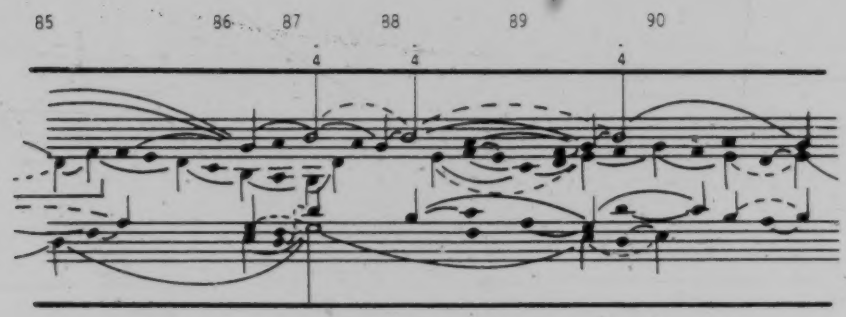
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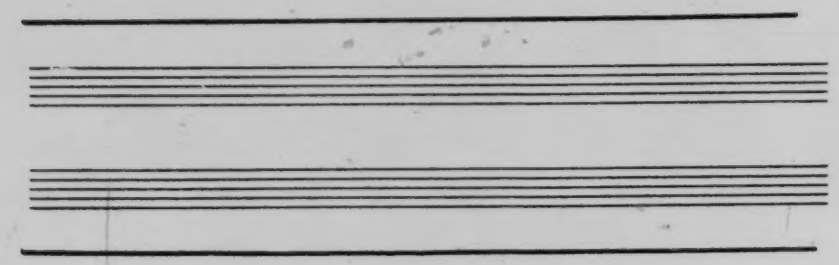

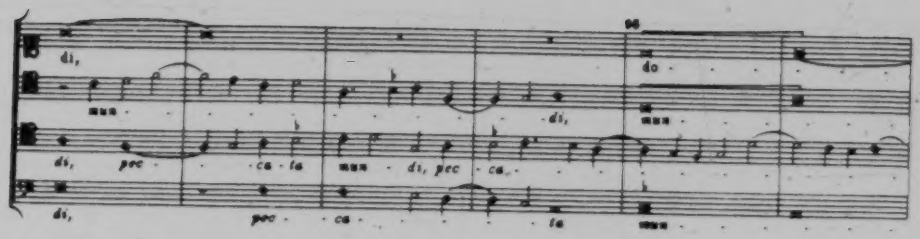
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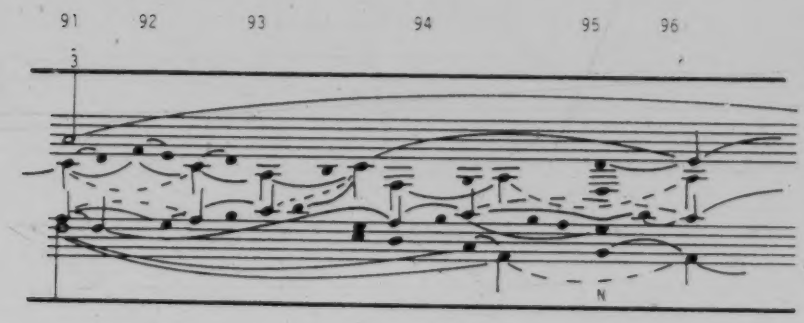
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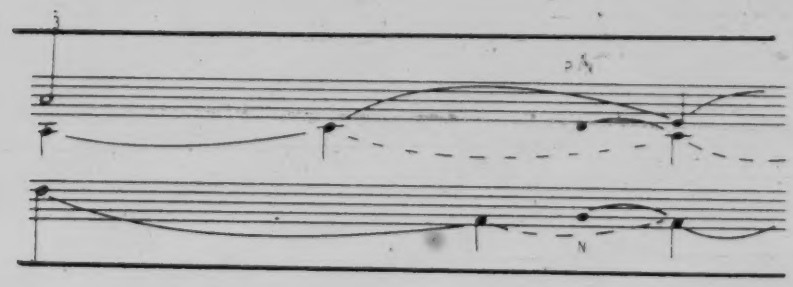
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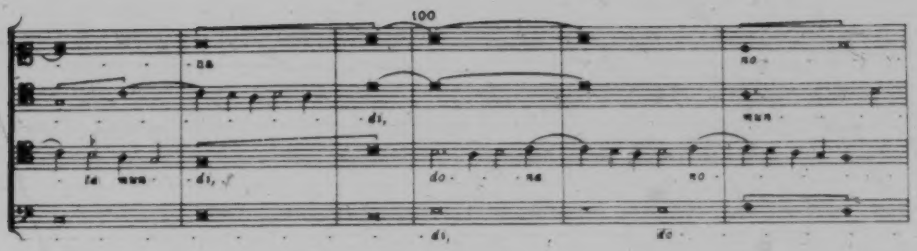
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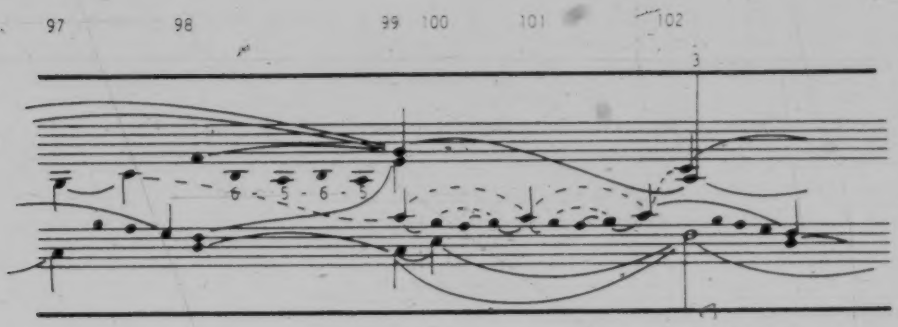
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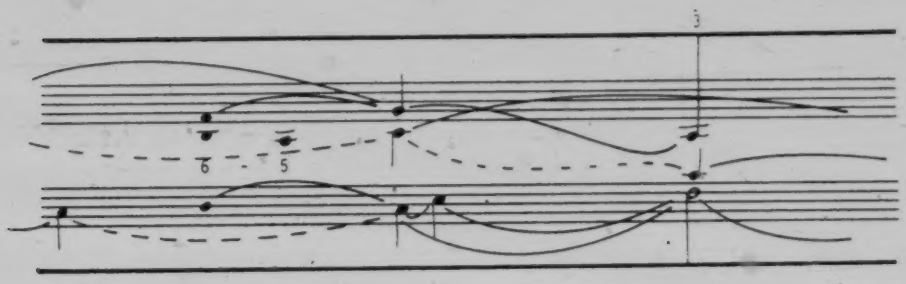
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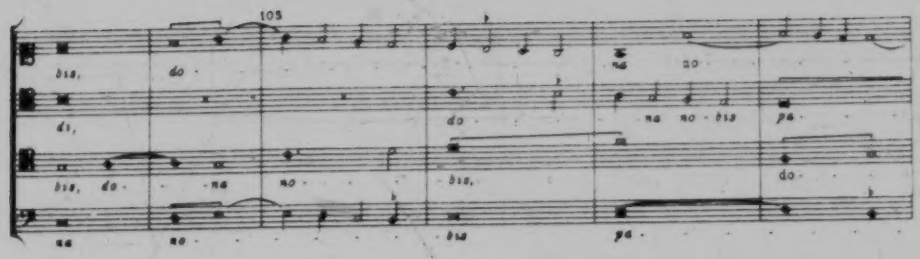
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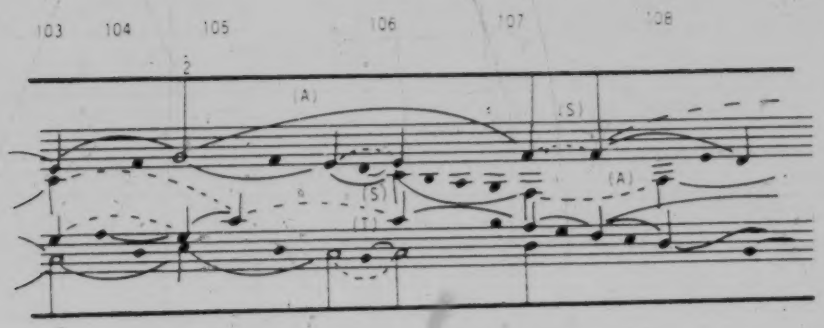
bis, do - na no - bis, do -
na no - bis pa -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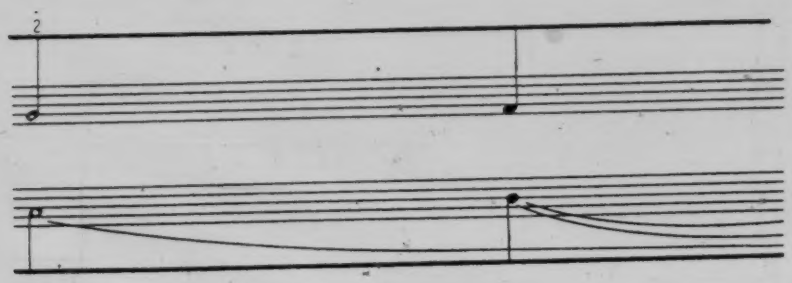
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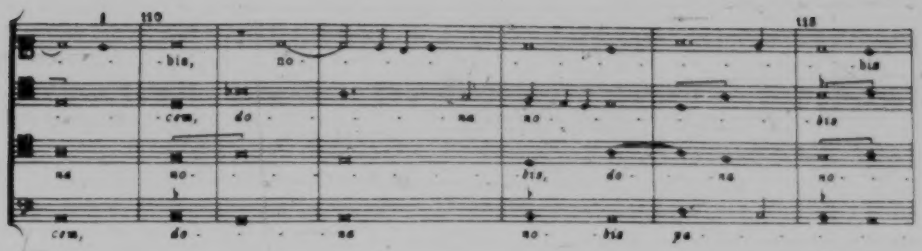
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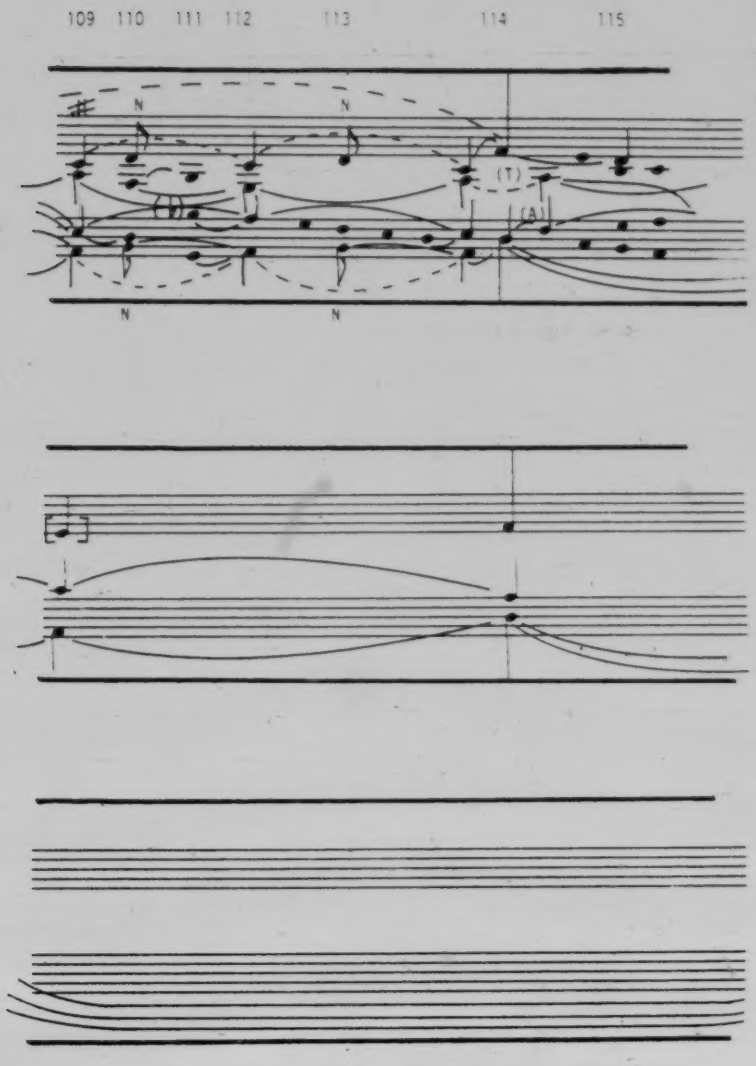
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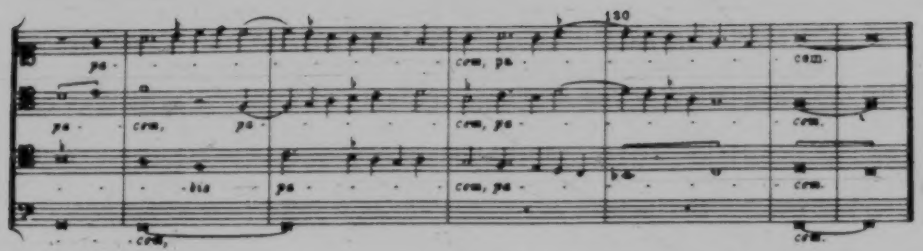
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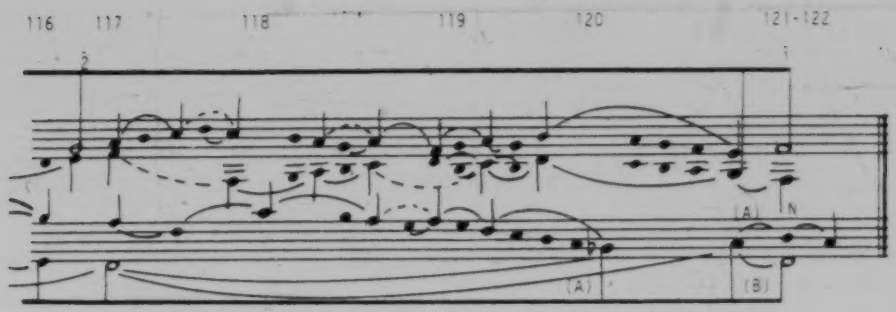
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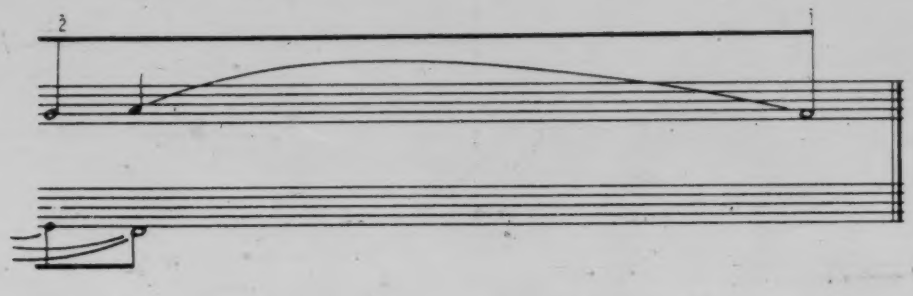
2
1

steps up to b($\flat$)^3 instead (mm.110 and 113), and the resolution to d^3 is delayed until m.114, where the D triad is firmly established. A descent to g^3 and subsequent resolution to the central F-major triad immediately follows the establishment of D. Since the resolution to the central triad coincides with the end of the cantus firmus, and since Josquin so rigidly follows the cantus melody in this section, m.117 must be considered the structural close of the piece. The subsequent codetta prolongs F major and provides the delayed resolution of $\hat{2}$.

Thus the mass ends with a deeper-level retrograde of the opening f^3-d^3-c^3 bass gesture. The motive is provided by the bass at the beginning of every movement except the Agnus Dei. In the opening measures of the Agnus, the bassus states the retrograde of the motive in augmentation (see Example 6-6b). At the end of the movement, the bass

Example 6-6b. *Missa Fortuna desperata*, Agnus Dei mm.1-12 (bassus only).

d^3 in m.114 is harmonized with a D triad that is an IN to the structural C triad prolonged from mm.103-106. However, C is not re-established; the music continues to the full linear cadence on the structural F in m.117, and the f-d-c

motive is presented in retrograde at a much deeper level at the end of the mass. At the deepest level (bottom graph), mm.103-117 exhibit a prolongation of the structural C-major triad (with structural $\hat{2}$ in m.104) resolving to F. The structural $\hat{2}$ resumes in m.116, just prior to the cadence, but instead of resolving to $\hat{1}$ it returns to $\hat{3}$ (m.117). The resolution to $\hat{1}$ finally occurs in m.121. During the codetta (mm.117-122), each of the three upper voices restates the c-d-c gesture. The registrally-emphasized c^3-d^3-c^3 in the superius in m.117 is the first statement, and the motive is then elaborated by the tenor in mm.118-120. In the altus voice, the c^3-d^3-c^3 within the final cadence (mm.121-122) is the last melodic gesture in the work.

Finally, mm.75-83 of the Agnus contain a deeper-level event derived from a foreground gesture. At first sight this excerpt appears to be an ostinato that generates rhythmic interest. However, closer inspection reveals an imitative duet between superius and tenor that creates a middleground arpeggiation of an F-major triad (see Example 6-6a, middle graph). The F triad in m.75 is the result of a full linear cadence in mm.74-75. The superius begins the ostinato-like figure based on the c-d-c neighbouring motive, and is quickly joined by the tenor in m.76. The altus states the opening gesture once in mm.76-77 before abandoning it in m.78, but the superius and tenor continue the imitation as they slowly ascend through an F-major

triad. When the tenor reaches the c^4 in m.81, it embellishes the c-d-c neighbour figure as the music begins to move away from the central F triad. The tenor finally completes the arpeggiation with the retrograde c-d-f gesture in mm.84-85.

Clearly, coherent middleground and background tonal structures can be found in some of Josquin's music. Furthermore, foreground events are occasionally reflected in middleground and background levels. The examples in this chapter indicate Josquin's ability to incorporate a given musical event--consciously or unconsciously--into all levels of structure. Triadic prolongation also occurs at the deepest levels in the works considered.

CONCLUSIONS

Two basic elements of tonality--triadic arpeggiation/prolongation and the tonal-hierarchical primacy of a central chord or "tonic"--provided the point of departure for this study. Although by no means the only characteristics of tonality, these two elements are nonetheless essential to the tonal system. In much of the music analyzed, a central sonority or triad--one that exhibits some of the characteristics of hierarchical primacy associated with a tonic in tonal music--can be identified, and musical events in a movement or section often may be interpreted as prolongations of the central sonority. The prolongations occur at all levels of the musical structure, and are effected by various means, including triadic arpeggiation (see for example the discussions of the Christe from *Missa La sol fa re mi* [Example 4-9], the first section of the Sanctus from *Missa Fortuna desperata* [Example 6-5], and the final Agnus Dei from *Missa Fortuna desperata* [Example 6-6]).

Certain principles of Medieval modal theory and some of Tinctoris's rules of counterpoint are evident in Josquin's music, and it is essential that the analyst be aware of those principles and rules when considering specific movements or sections. Although the relationship

between modal/contrapuntal elements and tonal idioms was not investigated in detail, some passages in the selected works clearly reveal a conflict between multi-part voice-leading techniques on the one hand and apparently harmonically-generated (i.e. tonally coherent) structures on the other (see for example the discussions of the Agnus Dei, mm.32-36, from *Missa L'homme armé super voces musicales* [Example 5-9], and the first Agnus Dei from *Missa L'homme armé sexti toni* [Example 6-3]).

Furthermore, investigation of apparently idiomatically tonal sections of the six masses leads to some interesting observations. As deeper levels of musical structure are revealed in a movement or section, an outer-voice framework frequently emerges that closely resembles the Schenkerian *Ursatz*. Prolongation of different tonal areas often seems to exploit the interval of a fifth--the "tonic-dominant" relationship--as in the opening section of the *Credo De tous biens* (see Example 5-13) and the Kyrie from *Missa L'homme armé sexti toni* (see Example 6-2). Tonal relationships based on intervals other than the fifth are occasionally evident as well. For example, prolongation in the Sanctus of *Missa La sol fa re mi* exhibits third-relationships; in some instances the prolonged tonal areas are related by the interval of a third to each other, while in other instances a given triad is prolonged by a third-related sonority (see Example 5-12).

The analyses also reveal frequent use of the $\hat{3}$-$\hat{2}$-$\hat{1}$ descent at cadences, and one observes certain consistencies in Josquin's treatment of the descent. The stepwise descent at a cadence rarely occurs in the upper voice. However, the upper voice often establishes a $\hat{3}$ *Kopfton*, and begins the $\hat{3}$-$\hat{2}$-$\hat{1}$ descent, which is then transferred to an inner voice (usually the tenor) in one of the following patterns:

Upper voice: $\hat{3}$-$\hat{2}$
Inner voice: \ $\hat{2}$-$\hat{1}$ or

Upper voice: $\hat{3}$
Inner voice: \ $\hat{3}$-$\hat{2}$-$\hat{1}$ or

Upper voice: $\hat{3}$-
Inner voice: $\hat{2}$-$\hat{1}$.

Instances of the first pattern can be seen in Examples 5-1 and 5-14, while the second, more common, pattern can be found in Examples 4-1, 4-3c, 5-2, 5-9, and 6-2. The third pattern is a hybrid of the first two basic transfers of the descent, and can be seen in Examples 5-7 and 5-14.

The analyses in this study have significant implications for the analysis of the pre-tonal repertory in general, because they clearly reveal tonal characteristics at all levels of the musical structure. The relatively advanced harmonic syntax revealed by the specific analyses suggests that Josquin's music--and consequently the music of his contemporaries--may be more "tonal" than was pre-

viously thought. Because of the modal and contrapuntal influences affecting the musical structure, these compositions cannot be labelled "tonal." However, revelation of tonal elements in the music clearly requires analytical techniques designed for the tonal repertory. The analyses have also suggested answers to at least three of the rhetorical questions posed at the end of Chapter III (pp.37-38). First, the species of fourth and fifth inherent in the mode of a piece appear to be weakened by the prevailing central tone and the subsequent relationship of all musical events to that tone. Second, the *cantus prius factus* seems to play a role in the tonal design of the music, but the nature and extent of that role is unclear. Finally, and perhaps most significantly, tonal idioms are evident in sections where the music does conform to the constraints of modal theory and rules of counterpoint. Although detailed investigation of these and other questions is beyond the scope of this study, it is nonetheless evident that centricity is an important structural factor in the six Josquin works examined.

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APPENDIX 1:

TEXT SECTIONALIZATION AND CADENCE TYPES IN THE SELECTED JOSQUIN WORKS

Mass and Sections	Cadence Type	Measure	Sonority	Triad
Sexti toni				
Kyrie	B5	17	open	F-[A]-C
Christe	linear	48	full	C-E-G
Kyrie	B5	73	full	F-A-C
Gloria				
Et in terra	B5	51	full*	F-A-C
Qui tollis	B5	150	full*	F-A-C
Credo				
Patrem	B5	77	open	F-[A]-C
Et resurrexit	linear	186	full	A-C-E
Et unam	linear	237	full	F-A-C
et vitam	B5	255	full*	F-A-C
Sanctus				
Sanctus	B5	19	open	F-[A]-C
Pleni sunt	Duet			
Gloria tua	Duet			
Hosanna	B5	78	open	F-[A]-C
Benedictus	Duet			
Agnus Dei				
Agnus I	B5	25	full*	F-A-C
Agnus II (a 3)	B5	75	open	F-[A]-C
Agnus III (a 6)	B5	150	full	F-A-C
Super voces				
Kyrie	B4	18	full	A-C-E
Christe	B4	62	full	E-G-B
Kyrie	B5	88	open	D-[F]-A
Gloria				
Et in terra	B5	58	open	D-[F]-A
Qui tollis	B5	142	open	D-[F]-A
Credo				
Patrem	B5	58	open	D-[F]-A
Et incarnatus	B4	136	full	A-C-E
Et in Spiritum	B5	226	open	A-[C]-E
Confiteor	B5	271	open	D-[F]-A
Sanctus				
Sanctus	linear	33	full	A-C-E
Pleni sunt (a 3)	linear	67	full*	A-C-E
Hosanna	B5	127	open	D-[F]-A

Mass and Sections	Cadence Type	Measure	Sonority	Triad
voces (cont'd)				
Benedictus	Duet			
Agnus Dei				
Agnus I	B5	35	open	D-[F]-A
Agnus II (a 3)	B4	61	full	D-F-A
Agnus III[1]	B5	186	open	D-[F]-A
La sol fa re mi				
Kyrie	linear	13	full	E-G-B
Christe	linear	42	full	A-C-E
Kyrie	linear	60	full	E-G-B
Gloria				
Et in terra	B4	39	full	E-G-B
Qui tollis	B4	110	full	E-G-B
Credo				
Patrem	B5	52	full	G-B-D
Et incarnatus	B4	241	open	E-[G]-B
Sanctus				
Sanctus	linear	25	full	E-G-B
Pleni sunt	B4	52	full	E-G-B
Hosanna I	linear	74	full	A-C-E
Benedictus	B5	20	full*	A-C-E
Qui venit (a 3)	linear	55	full	C-E-G
Hosanna II	B4	92	full	E-G-B
Agnus Dei				
Agnus I	B5	28	open	A-[C]-E
Agnus II	Duet			
Agnus III	*"Agnus*	*tertium*	*super*	*primum"*
Fortuna Desperata				
Kyrie	B5	15	open	F-[A]-C
Christe	B4	53	full	F-A-C
Kyrie	B5	72	open	F-[A]-C

[1] It is worth noting that the third Agnus has a fifth voice added in small print in the Smijers edition. The closing sonority for this section, though indicated as open, has an F♯ added in the fifth voice. According to the editor, the source is Petrucci's 1507 edition. See Josquin Desprez, *Missen* Deel. III.

Mass and Sections	Cadence Type	Measure	Sonority	Triad
Fortuna (cont'd)				
Gloria				
Et in terra	B5	57	open	F-[A]-C
Qui tollis	B5	157	full	F-A-C
Credo				
Patrem	B5	117	open	F-[A]-C
Et incarnatus	B5	177	full	F-A-C
Et in Spiritum	B5	258	full*	F-A-C
Sanctus				
Sanctus	B5	65	open	F-[A]-C
Pleni sunt	B5	126	open	F-[A]-C
Hosanna	B5	162	open	F-[A]-C
Benedictus (a 3)	B5	45	full	F-A-C
Agnus Dei				
Agnus I	linear	60	full	C-E-G
Agnus II	B5	121	open	F-[A]-C
Ad fugam				
Kyrie	B5	9	open	G-[B♭]-D
Christe	B5	43	full*	G-B♭-D
Kyrie	B5	61	open	G-[B♭]-D
Gloria				
Et in terra	B5	48	full*	G-B♭-D
Qui tollis	B5	135	full*	G-B♭-D
Credo				
Patrem	B5	58	open	G-[B♭]-D
Et incarnatus	B5	204	full*	G-B♭-D
Sanctus				
Sanctus	B5	35	full*	G-B♭-D
Pleni sunt (a 3)	B5	60	open	G-[B♭]-D
Hosanna	B5	127	open	G-[B♭]-D
Benedictus (a 3)	B5	50	open	G-[B♭]-D
Agnus Dei				
Agnus I	B5	44	full*	G-[B♭]-D
Agnus II (a 3)	[?]	83	open	C-[E]-G

Mass and Sections	Cadence Type	Measure	Sonority	Triad
Credo De tous biens				
Patrem	B5	60	open	G-[B♭]-D
Et incarnatus	B5	120	full*	G-B♭-D
Et in Spiritum	Duet			
Qui cum Patre	B5	204	full*	G-B♭-D